N-Channel Power MOSFETs Selector Guide

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Introduction

Vishay Siliconix Power MOSFETs – Compact and Efficient

Vishay Siliconix leads the industry in the development of power MOS silicon and packaging technologies that boost power management, power conversion efficiency and greatly reducing the board area in computers, laptops, notebooks, PDAs, cellular phones, automotive electronics, consumer electronics, and many other systems.

Vishay Siliconix continually innovates to meet the increasing demands of applications such as dc-to-dc conversion and load switching. For example, our TrenchFET® Gen II power MOSFET silicon technology enables the first power MOSFETs in the SO-8 footprint with a maximum on-resistance of less than 4 milliohms at a 4.5-V gate drive. In another breakthrough, our WFET® power MOSFETs combine the ultra low on-resistance capabilities of TrenchFET technology with extraordinarily low gate-drain capacitance to maximize dc-to-dc converter efficiency. A complete new family of p-channel power MOSFETs, built on a patent-pending TrenchFET technology, offers a reduction in on-resistance up to 45% compared with the previous state-of-the-art and signifies a new opportunity to reduce system power consumption.

Vishay Siliconix packaging innovations include the small-outline LITTLE FOOT, the thermally enhanced PowerPAK and PolarPAK, and the chipscale MICRO FOOT families, each of which provides designers with a range of surface-mount options to ensure efficient use of space in power management, power conversion, and other power MOSFET applications.

Getting the Most Out of Your Selection and Design Process

This Selector Guide is organized by functionality, packaging (largest to smallest), breakdown voltage, and on-resistance ($r_{DS(on)}$) at 4.5 V). There is also an alphanumerically ordered listing with specifications. Although this Selector Guide is a convenient way to view the entire Vishay Siliconix Power MOSFET portfolio, we highly recommend that you visit our website, that is refreshed at least weekly, for the most up to date information.

Additionally, the power of the web allows us to enhance your selection and design-in process. Besides being able to click on the function, key specifications and size of MOSFET that you are looking for, there is also a parametric search engine. Either will give you a list of possible datasheets integrated with a table of key specifications. From here you can click on any of the datasheets and “bundle” it with the related documents and drawings that you will need such as package, tape and reel and pad drawings, SPICE models, reliability information, and part marking.

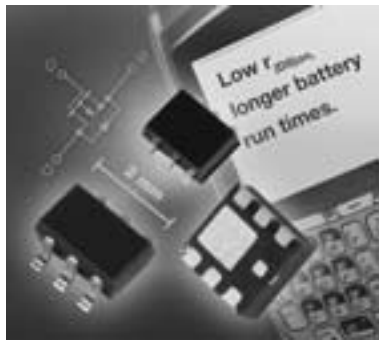
Other web information includes application notes, a list of technical papers, and Selector Guides. Further, samples can be ordered and technical questions can be asked through the website.

Please take the time to review our web features on page 10, and visit http://www.vishay.com/mosfets.

Learn more about
http:www.vishay.com/mosfets
on page 10

Note: TrenchFET WFET are registered trademarks of Siliconix incorporated.

Next-Generation P-Channel TrenchFET® Power MOSFETs Offer Industry-Low On-Resistance in Tiny Footprints to Extend Battery Life



- Industry-low on-resistance in compact footprints
- Down to 29 milliohms in the PowerPAK SC-70 package (2.05 mm by 2.05 mm)
- Down to 80 milliohms in the standard SC-70 (2 mm by 2.1 mm)
- Down to 130 milliohms in the SC-89 (1.6 mm by 1.6 mm).
- -12-V, -20-V, and -30-V devices available

Built on a new-generation TrenchFET® silicon technology, specifications for these p-channel devices represent an improvement of up to 63 % when compared to the next-best power MOSFETs on the market. The new p-channel TrenchFETs will be used for load switching, PA switching, and battery switching in portable end products including cell phones, MP3 players, PDAs, and digital still cameras, where their low conduction losses will help to extend battery run times and their miniaturized packages will help to save valuable board space, allowing increased functionality. Siliconix was the first manufacturer to supply TrenchFET power MOSFETs, and with these new-generation devices reaffirms its leadership in Trench and p-channel power MOSFET technology.

The next-generation p-channel TrenchFET power MOSFETs include the Si1065X, Si1067X, Si1071X, and Si1073X in the SC-89 package; the Si1469DH, Si1471DH, and Si1473DH in the SC-70 package; and the SiA413DJ and SiA421DJ in the PowerPAK SC-70. For latest devices in this family, visit the p-channel MOSFET gateway page www.vishay.com/mosfets/p-channel.

PowerPAK ChipFET Power MOSFETs Replace P-Channel TSOP-6 and N-Channel SO-8 Devices with Lower Thermal Resistance and Smaller Footprint

Visit http://www.vishay.com/mosfets/powerpack-chipfet-package for the most updated list of devices

- Advanced thermal performance in a compact 3-mm by 1.8-mm footprint
- 3-W maximum power dissipation for high thermal efficiency
- Available in single, dual, co-packaged n- and p-channel and MOSFET + Schottky versions
- Breakdown voltage ratings from 8 V to 20 V

PowerPAK ChipFET provides a smaller-footprint alternative to MOSFETs in the TSOP-6 and SO-8 packages.

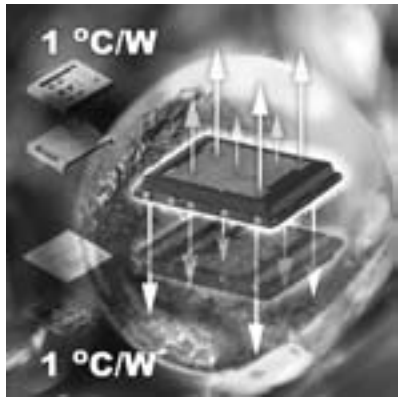
Compared to devices in the TSOP-6, new PowerPAK ChipFETs feature 75 % lower thermal resistance values, a 33 % smaller footprint area, and a 25 % thinner height profile (0.8 mm). Enabling longer on-times in portable devices, p-channel PowerPAK ChipFETs will be used to replace load, PA, charger, and battery MOSFET switches in the TSOP-6.

The 3-W maximum power dissipation of the PowerPAK ChipFET package is actually the same as the much larger SO-8, allowing n-channel PowerPAK ChipFETs to replace SO-8 MOSFETs in certain point-of load, fixed telecom synchronous rectification, and low-power computer dc-to-dc conversion applications. Additionally, the p-channel plus Schottky diode version will be used in asynchronous dc-to-dc applications, such as those found in hard disk drives and game consoles, to replace devices in the SO-8.

With their low conduction losses and enhanced thermal efficiency, power MOSFETs in Vishay's new PowerPAK ChipFET family are pin-compatible with products in the standard ChipFET package.

PowerPAK ChipFET MOSFETs can be identified with Si5xxxDU part numbers.

Breakthrough PolarPAK Package Brings High Reliability to Double-Sided Cooling



Visit http://www.vishay.com/ref/polarpak-package for the most updated list of devices

- Dual thermal paths
  - Top (1 °C/W) and bottom (1 °C/W) cooling provides dual heat dissipation paths for forced air applications
  - Double the current density (>60 A) of the SO-8 in same footprint area for space and cost savings
- Leadframe-based surface-mount packaging
  - Easy handling enables high assembly yield
  - Plastic encapsulation provides good die protection and reliability
  - Fixed footprint and pad layout, independent of die size, across range of family

PolarPAK is the first power MOSFET package to combine double-sided cooling with an industry-standard leadframe and plastic encapsulation construction. Easy handling and mounting onto the PCB provides high assembly yields in mass-volume production. With multiple sources available, PolarPAK is well on its way to becoming an industry standard.

PolarPAK devices can be identified with the SiExxx prefix.

Industry's First Load Switches Designed for On-Resistance Ratings at 1.2 V and 1.5 V

- Optimized for use with the low-voltage core ICs in portable electronic systems
- Allow the driver voltage to turn on the switch from a lower output voltage than 1.8 V, reducing the need for level shift circuitry
- Help reduce power consumption and increase battery life
- Offer choice of on-resistance and package options with footprints as small as 1.5 mm by 1.5 mm

To help minimize power consumption and increase battery life, many of the ASICs found in portable electronics systems are designed to operate at core supply voltages between 1.5 and 1.65 V. Until now, however, the lack of power MOSFETs with guaranteed turn-on operation below 1.8 V has made it difficult for designers to take advantage of these low core supply voltages without the use of level-shifting circuitry, which adds complexity while increasing power consumption.

Vishay addresses this problem with breakthrough power MOSFETs that work directly from 1.2-V and 1.5-V core supply voltages with on-resistance as low as 43 milliohms. With their low threshold voltage and guaranteed specifications at a 1.2-V or 1.5-V gate drive, the new devices eliminate the need for level-shifting circuitry and maximize the power-saving benefits of low operating voltages in battery-operated systems.

Vishay's 1.2-V and 1.5-V MOSFET families include n-channel and p-channel devices in packages as small as SC-70 packages, as well as in the chipscale MICRO FOOT format. For device selection, see www.vishay.com/mosfets.

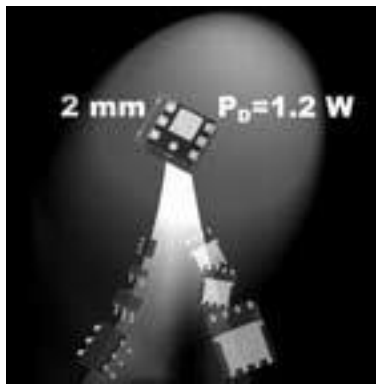
New ThermaSim™ is First On-Line Thermal Simulation Tool to Use Finite Element Analysis Models for Increased Accuracy

- Available on http://www.vishay.com/thermal-modelling with exhaustive library of Vishay Siliconix MOSFET models
- Can include effects of other heat dissipating components
- Allows user to configure:
  - Power dissipation profiles
  - Heat sink size, material, and attachment method
  - PCB size, layers, material, copper spreading, vias, etc.
  - Component placements and solder quality
  - System temperature and air flow
- Simulation results are emailed directly to the designer and can be downloaded into Excel.

Vishay's new ThermaSim™ is a free tool that helps designers speed time to market by allowing detailed thermal simulations of Vishay Siliconix power MOSFETs to be performed before prototyping. Applicable to any power MOSFET application, ThermaSim will be especially useful in high-current, high-temperature applications such as automotive, fixed telecom, desktop and laptop computers, and industrial systems.

Simulation results are emailed directly to the designer and can be downloaded into Excel. Multiple results with varying product, package, or other input data can be merged within Excel to compare and examine trends. Thermal images are provided, and a MPEG video clip of the thermal image with transient simulation is also available. Simulations can be saved for modifications at a later date.

Combining Advanced Thermal Conductivity, Excellent Electrical Performance and Ultimate Miniaturization



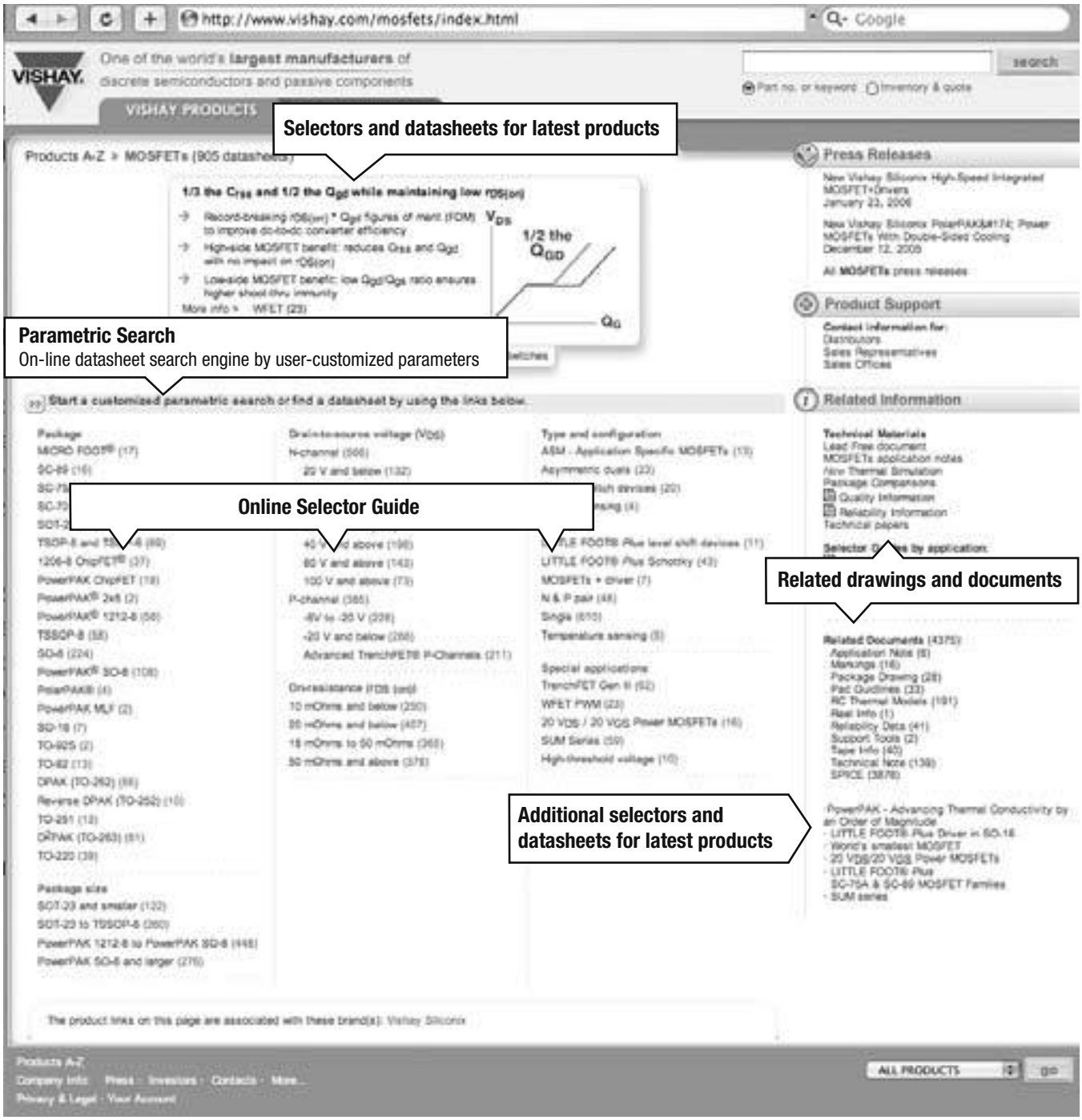
Visit http://www.vishay.com/powerpak-sc70-package for the most updated list of devices
Visit http://www.vishay.com/powerpak-sc75-package for the most updated list of devices

- PowerPAK SC-70 & PowerPAK SC-75 provide performances of bigger packages in smaller footprints
  - 55% smaller than TSOP-6 with better thermal performance and similar on-resistance
- Footprint compatible to TSOP-6 and SC-70 (PowerPAK SC-70), SC-75 and SC-89 (PowerPAK SC-75)
- Better performance than existing small footprints
  - Half the thermal impedance while more than half the on-resistance of the industry standard SC-70 and SC-75
  - Higher current density, higher power dissipation, increased junction temperature
- Capable of larger die sizes
- Ultra-compact, leadless 2.0 mm x 2.1 mm (PowerPAK SC-70) and 1.6 mm x 1.6 mm (PowerPAK SC-75) outline and low 0.7 mm profile are ideal for space-constrained portable devices
- Single and dual configurations
- For load switches in portable devices such as mobile phones, notebooks and computers, PDAs, digital cameras, MP3 players

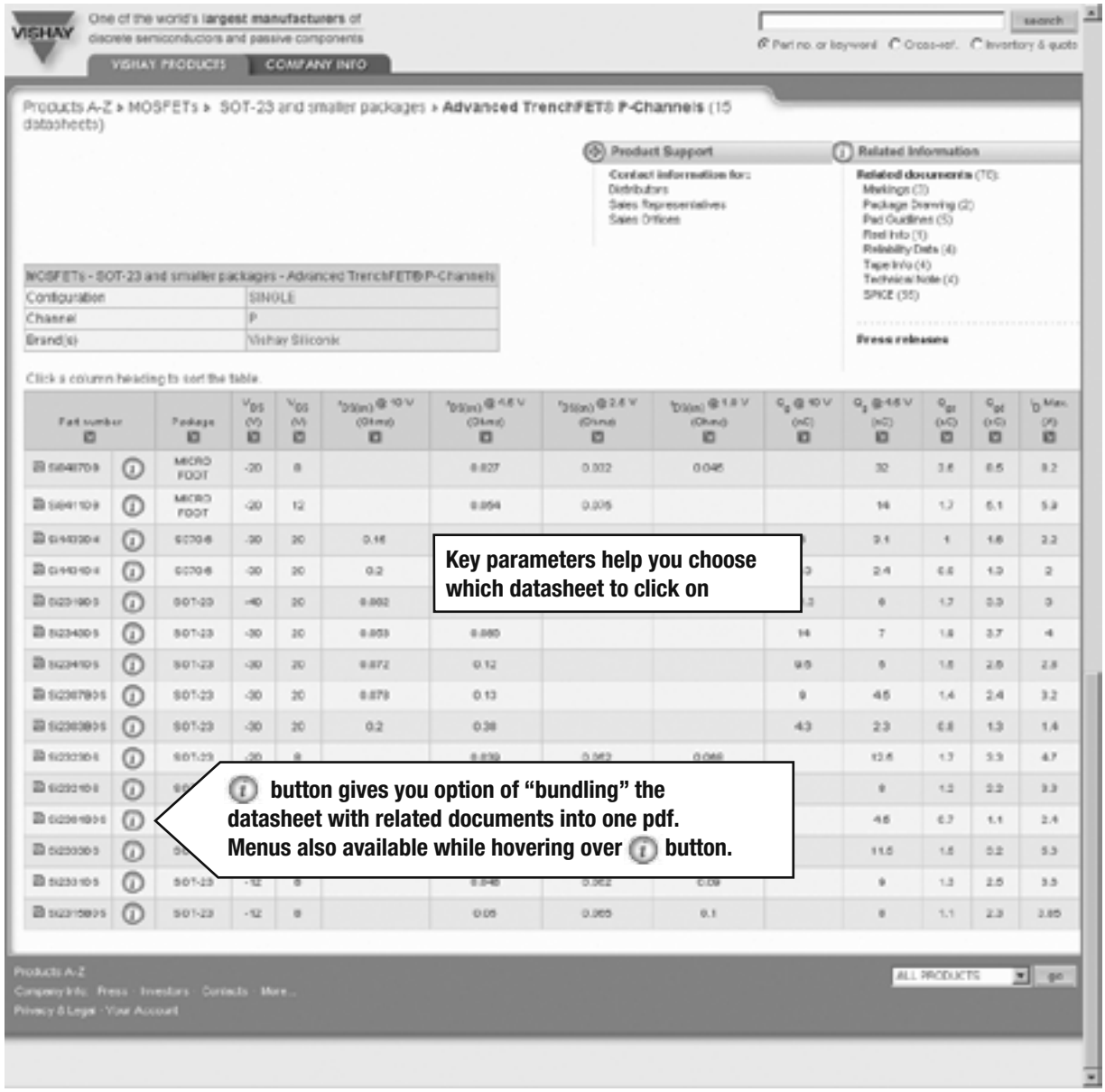
Overview of Website

Check out http://www.vishay.com/mosfets:

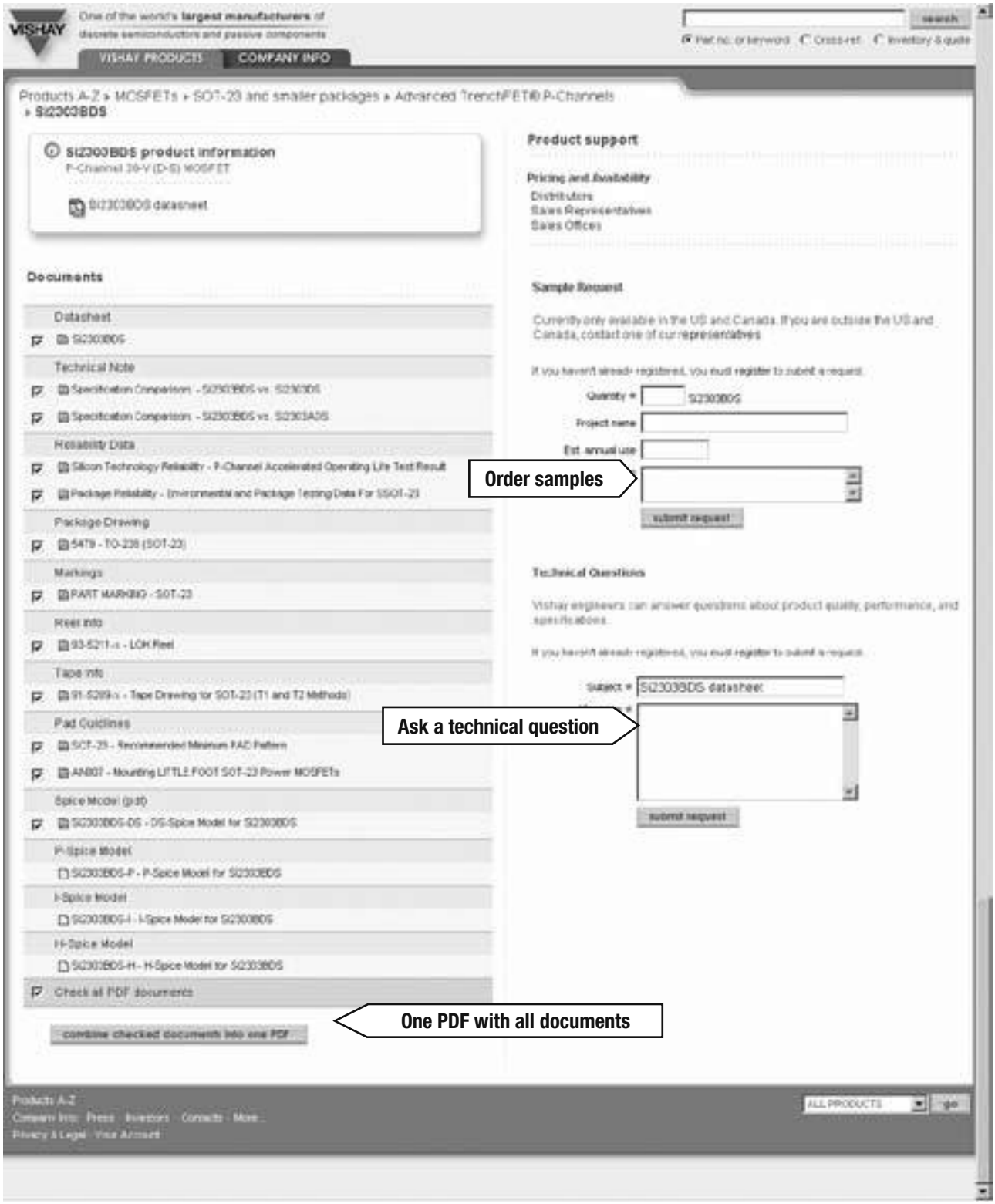
- New features
- More content
- Refreshed weekly



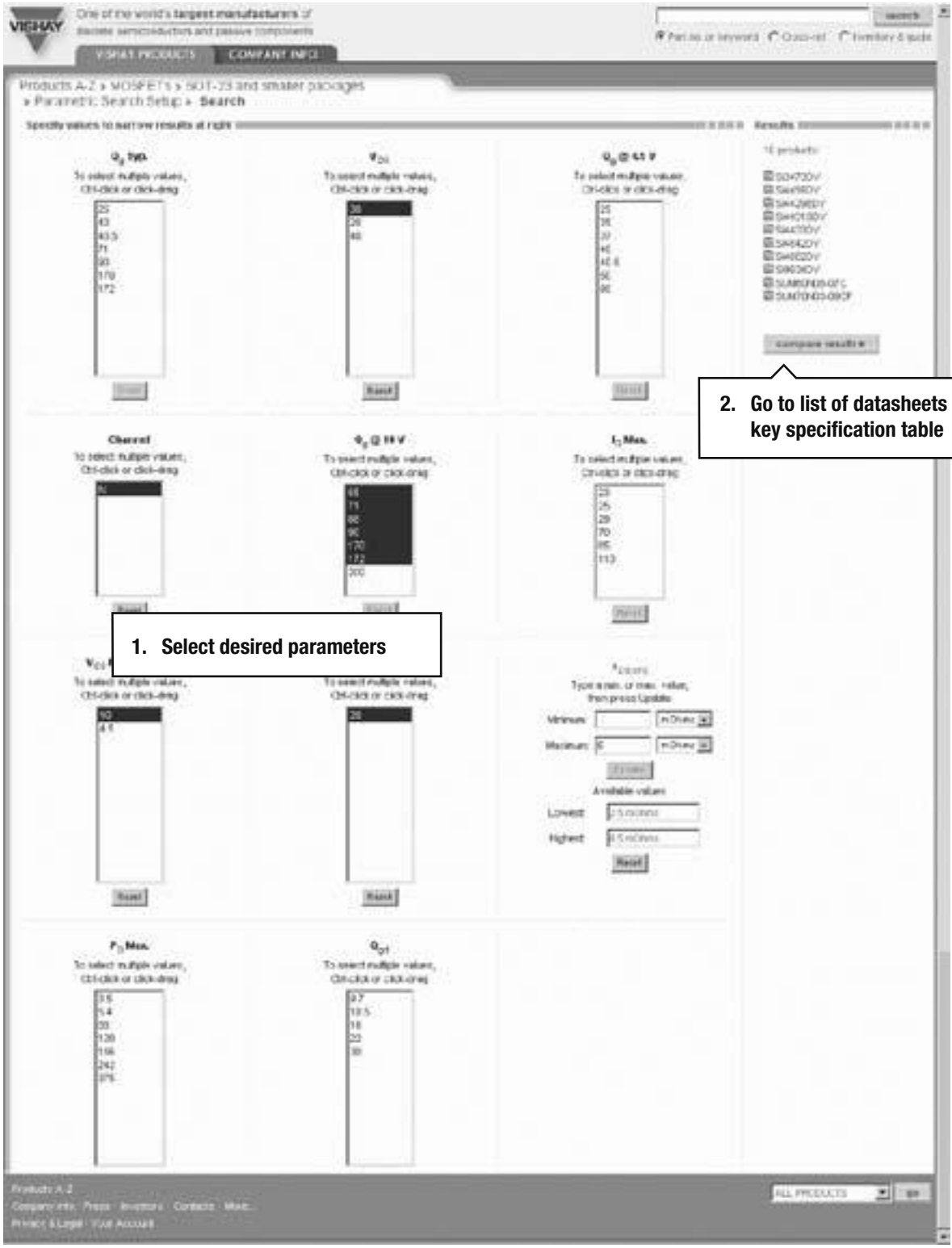
Sample Datasheet List



Sample of Datasheet with Related Documents



Example of Parametric Search



N-channel

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
Single N-Channel														
TO-220														
SUP90N03-03	30	20	0.0029	0.0033							90	171	81.5	187
SUP85N04-03	40	20	0.003	0.005							85	165		250
SUP85N06-05	60	20	0.005	0.007							85	155		250
SUP75N06-07L	60	20	0.007	0.008							75	75		250
SUP70N06-14	60	20	0.014								70	45		142
SUP90N08-4m8P	75	20	0.0048	0.0085						d	90	105		300
SUP85N08-08	75	20	0.008								85	100		250
SUP60N10-16L	100	20	0.016	0.018							60	73		150
SUP40N10-30	100	20	0.03	0.034						d	40	35		107
SUP85N15-21	150	20	0.021								85	75		300
SUP28N15-52	150	20	0.052	0.06						d	28	33		120
SUP18N15-95	150	20	0.095	0.1						d	18	20		88
SUP57N20-33	200	20	0.033								57	90		300
SUP52N20-39P	200	25	0.039							s	52	81		250
SUP36N20-54P	200	25	0.054							s	36	57		166
SUP33N20-60P	200	25	0.06							s	33	53		156
SUP40N25-60	250	30	0.06	0.064						d	40	95		300
D^2PAK (TO-263)														
SUM90N03-2m2P	30	20	0.0022	0.0027							90	171	81.5	250
SUM110N04-2m3L	40	20	0.0023	0.003							110	240		375
SUM110N04-03P	40	20	0.0031								110	90		375
SUM110N04-04	40	20	0.0035								110	140		250
SUM110N04-05H	40	20	0.0053								110	95		150
SUM110N06-3m4L	60	20	0.0034	0.0041							110	200		375
SUM110N06-3m9H	60	20	0.0039								110	200		375
SUM75N06-09L	60	20	0.0093	0.0135							75	47		125
SUM50N06-16L	60	20	0.016	0.022							50	25		93
SUM90N08-4m8P	75	20	0.0048	0.0085						d	90	105		300
SUM110N10-09	100	20	0.0095								110	110		375

Notes:
a. Q_g @ V_{GS} = 15 V (vs. 10 V)
b. Q_g @ V_{GS} = 5 V (vs. 4.5 V)
c. $r_{DS} = r_{SS}/2$
d. $r_{DS(ON)}$ @ V_{GS} = 6 V (vs. 4.5 V)
e. $r_{DS(ON)}$ @ V_{GS} = 3 V (vs. 3.3 V)
f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
l. Not used
m. Schottky connected to channel 1
n. Half-bridge
o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

N-channel, continued

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
D^2PAK (TO-263) (Continued)														
SUM60N10-17	100	20	0.0165	0.019						d	60	65		150
SUM47N10-24L	100	20	0.024	0.027							47	40		136
SUM40N10-30	100	20	0.03	0.034						d	40	35		107
SUM85N15-19	150	20	0.019								85	76		375
SUM40N15-38	150	20	0.038	0.042						d	40	38		166
SUM23N15-73	150	20	0.073	0.077						d	23	22		100
SUM65N20-30	200	20	0.03								65	90		375
SUM52N20-39P	200	25	0.039							s	52	81		250
SUM36N20-54P	200	25	0.054							s	36	57		166
SUM33N20-60P	200	25	0.06							s	33	53		156
SUM27N20-78	200	20	0.078	0.083						d	27	40		150
SUM09N20-270	200	20	0.27	0.3						d	9	11		60
SUM45N25-58	250	30	0.058	0.062						d	45	95		375
SUM18N25-165	250	20	0.165								18	30		150
TO-251														
SUU50N025-06P	25	20	0.0062	0.01							78	44	20.5	65
SUU50N025-09BP	25	20	0.0086	0.012							62	38	18.5	55
SUU50N04-08P	40	16	0.008	0.01							20	76	34.5	62.5
SUU50N04-10P	40	16	0.01	0.012							20	64	30	53.5
SUU50N04-16P	40	16	0.016	0.018							20	39.2	15.6	35.7
DPAK (TO-252)														
SUD50N02-04P	20	20	0.0043	0.006							34		40	136
SUD50N02-06P	20	20	0.006	0.0095							50		19	65
SUD50N02-09P	20	20	0.0095	0.017							20		10.5	39.5
SUD50N025-4m5P	25	20	0.0045	0.006							50	76.3	36.3	108
SUD50N025-05P	25	20	0.0052	0.0076							89	63	30	83
SUD50N025-06P	25	20	0.0062	0.01							78	44	20.5	65
SUD50N025-09BP	25	20	0.0086	0.012							62	38	18.5	55
SUD50N03-06AP	30	20	0.0057	0.0078							90	62	30	83
SUD50N03-12P	30	20	0.012	0.0175							47		13	46.8
SUD50N03-16P	30	20	0.016	0.024							37		8.5	40.8

Notes:

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d. $r_{DS(ON)}$ @ V_{GS} = 6 V (vs. 4.5 V)
e. $r_{DS(ON)}$ @ V_{GS} = 3 V (vs. 3.3 V)
f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
l. Not used
m. Schottky connected to channel 1
n. Half-bridge
o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

N-channel, continued

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
SUD50N04-06P	40	16	0.0065	0.008							20	110	53.6	79
SUD50N04-08P	40	16	0.008	0.01							20	76	34.5	62.5
SUD50N04-07	40	20	0.0074	0.011							65	50		65
SUD50N04-10P	40	16	0.01	0.012							20	64	30	53.5
SUD50N04-13P	40	16	0.013	0.0155							20	52.3	23.7	35.7
SUD50N04-16P	40	16	0.016	0.018							20	39.2	15.6	35.7
SUD50N04-25P	40	16	0.02	0.025							20	25	11.4	28.8
SUD50N06-09L	60	20	0.0093	0.0122							50	47		136
SUD23N06-31L	60	20	0.031	0.045							23	11		100
SUD40N08-16	80	20	0.016								40	42		136
SUD40N10-25	100	20	0.025	0.028							40	40		136
SUD06N10-225L	100	20	0.2	0.225							6.5		2.7	20
SUD25N15-52	150	20	0.052	0.06						d	25	33		136
SUD15N15-95	150	20	0.095	0.1						d	15	20		62
SUD19N20-90	200	20	0.09	0.105						d	19	34		136
SUD17N25-165	250	20	0.165								17	30		136
PowerPAK SO-8														
Si7858ADP	12	8		0.0026		0.0037					29		54	5.4
Si7866ADP	20	20	0.0024	0.003							40	83	39	83
Si7154DP	20	12		0.0032		0.005					30	90	40	62.5
Si7136DP	20	20	0.0032	0.0045							30	51.5	24.5	39
Si7448DP	20	12		0.0065		0.009					22		38	5.2
Si7366DP	20	20	0.0055	0.009							20		16	5
Si7344DP	20	20	0.008	0.012							17		10	4.1
Si7658DP	30	20	0.0024	0.00325							60	110	48.5	104
Si7336ADP	30	20	0.003	0.004							30		36	5.4
Si7636DP	30	20	0.004	0.0048							28		36	5.2
Si7892BDP	30	20	0.0042	0.0057							25		27	5
Si7382DP	30	20	0.0047	0.0062							24		27	5
Si7386DP	30	20	0.007	0.0095							19		11.5	5
Si7384DP	30	20	0.0085	0.0125							18		12	5

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f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
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o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

N-channel, continued

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
PowerPAK SO-8 (Continued)														
Si7686DP	30	20	0.0095	0.014						b	35	17	9.2	37.9
Si7196DP	30	20	0.011	0.016							16	24.5	13.2	41.6
Si7476DP	40	20	0.0053	0.0066							25	118		5.4
Si7848BDP	40	20	0.009	0.012							47	33	15	36
Si7478DP	60	20	0.0075	0.0088							20	105		5.4
Si7138DP	60	20	0.0078	0.009						d, q	30	90	55	96
Si7850DP	60	20	0.022	0.031							10.3	18		4.5
Si7148DP	75	20	0.011	0.0145							28	68	33	96
Si7852DP	80	20	0.0165	0.022						d	12.5	34		5.2
Si7456DP	100	20	0.025	0.028						d	9.3	36		5.2
Si7454DP	100	20	0.034	0.04						d	7.8	24		4.8
Si7430DP	150	20	0.045	0.047						r	26	28.5		64
Si7846DP	150	20	0.05								24.5	30		5.2
Si7898DP	150	20	0.085	0.095						d	4.8	17		5
Si7450DP	200	20	0.08	0.09						d	5.3	34		5.2
Si7462DP	200	20	0.13	0.142						d	4.1	20		4.8
Si7464DP	200	20	0.24	0.26						d	2.8	12		4.2
Si7434DP	250	20	0.155	0.162						d	3.8	34		5.2
PolarPAK														
SiE810DF	20	12	0.0014	0.0016		0.0027					221	200	90	125
SiE808DF	20	20	0.0016	0.0025							220	102	46	125
SiE820DF	20	12		0.0035		0.0064					136	95	43	104
SiE822DF	20	20	0.0034	0.0055							138	52	24	104
SiE806DF	30	12	0.0017	0.0021							202	165	75	125
SiE802DF	30	20	0.0019	0.0026							60	105	50	125
SiE830DF	30	12	0.0042	0.0048							120	75	33	104
SiE800DF	30	20	0.0072	0.0115							50	23	12	104
SiE812DF	40	20	0.0026	0.0034							163	111	52	125
SiE832DF	40	20	0.0055	0.007							103	51	25	104
SiE818DF	75	20	0.0095	0.0125							79	63	33	125

Notes:

a. Q_g @ V_{GS} = 15 V (vs. 10 V)
b. Q_g @ V_{GS} = 5 V (vs. 4.5 V)
c. $r_{DS} = r_{SS}/2$
d. $r_{DS(ON)}$ @ V_{GS} = 6 V (vs. 4.5 V)
e. $r_{DS(ON)}$ @ V_{GS} = 3 V (vs. 3.3 V)
f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
l. Not used
m. Schottky connected to channel 1
n. Half-bridge
o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

N-channel, continued

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
SO-8														
Si4838DY	12	8		0.003		0.004					25		40	3.5
Si4866BDY	12	8		0.0053		0.006	0.0074				21.5		52	4.45
Si4378DY	20	12		0.0027		0.0042					25		55	3.5
Si4398DY	20	20	0.0028	0.004							25		34	3.5
Si4876DY	20	12		0.005		0.0075					21		55	3
Si4408DY	20	20	0.0045	0.0068							21		21	3.5
Si4466DY	20	12		0.009		0.013					13.5		40	3
Si4630DY	25	16	0.0027	0.0032							40	107.5	49	7.8
Si4632DY	25	16	0.0027	0.0033							40	108	49	7.8
Si4368DY	30	12	0.0032	0.0036							25		53	3.5
Si4438DY	30	20	0.0027	0.004							36	84	41	7.8
Si4626DY	30	20	0.0036	0.0048							30	75	34	6
Si4442DY	30	12	0.0045	0.005		0.0075					22		36	3.5
Si4430BDY	30	20	0.0045	0.006							20		24	3
Si4634DY	30	20	0.0052	0.0067							24.5	45.5	21.5	5.7
Si4874BDY	30	20	0.007	0.0085							16		21	3
Si4386DY	30	20	0.007	0.0095							16		11	3.1
Si4420BDY	30	20	0.0085	0.011						b	13.5		16	2.5
Si4384DY	30	20	0.0085	0.0125							15		12	3.1
Si4686DY	30	20	0.0095	0.014						b	18.2	17	9.2	5.2
Si4662DY	30	20	0.01	0.014							18.6	24	11	6.25
Si4348DY	30	12	0.0125	0.014							11		15	2.5
Si4894BDY	30	20	0.011	0.016						b	12		13.2	2.5
Si4890DY	30	25	0.012	0.02							11		14.2	2.5
Si4346DY	30	12	0.023	0.025	0.03	0.036				e	8		6.5	2.5
Si4800BDY	30	25	0.0185	0.03						b	9		8.7	2.5
Si4456DY	40	20	0.0038	0.0045							33	81	37.5	7.8
Si4840DY	40	20	0.009	0.012							14		18.5	3.1
Si4446DY	40	12	0.04	0.045							5.2		8	2
Si4470EY	60	20	0.011	0.013						d	12.7	46		3.75
Si4850EY	60	20	0.022	0.031							8.5	18		3.3

Notes:

a. Q_g @ V_{GS} = 15 V (vs. 10 V)
b. Q_g @ V_{GS} = 5 V (vs. 4.5 V)
c. $r_{DS} = r_{SS}/2$
d. $r_{DS(ON)}$ @ V_{GS} = 6 V (vs. 4.5 V)
e. $r_{DS(ON)}$ @ V_{GS} = 3 V (vs. 3.3 V)
f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
l. Not used
m. Schottky connected to channel 1
n. Half-bridge
o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

N-channel, continued

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
SO-8 (Continued)														
Si4436DY	60	20	0.036	0.043							8	21	10.5	5
Si4896DY	80	20	0.0165	0.022						d	9.5	34		3.1
Si4480DY	80		0.035	0.04						d	6	30		2.5
Si4486EY	100	20	0.025	0.028						d	7.9	36		3.8
Si4484EY	100	20	0.034	0.04						d	6.9	24		3.8
Si4472DY	150	20	0.045	0.047						r	7.7	28.5		5.9
Si4488DY	150	20	0.05								5	30		3.1
Si4848DY	150	20	0.085	0.095						d	3.7	17		3
Si4490DY	200	20	0.08	0.09						d	4	34		3.1
Si4418DY	200	20	0.13	0.142						d	3	20		2.5
Si4464DY	200	20	0.24	0.26						d	2.2	12		2.5
Si4462DY	200	20	0.48	0.51						d	1.5	6		2.5
Si4434DY	250	20	0.155	0.162						d	3	34		3.1
TSSOP-8														
Si6410DQ	30	20	0.014	0.021							7.8		22.5	1.5
PowerPAK 1212-8														
Si7100DN	8	8		0.0035		0.0045					35		40	52
Si7102DN	12	8		0.0038		0.0047					35		41	52
Si7108DN	20	16	0.0049	0.0061							22		20	3.8
Si7106DN	20	12		0.0062		0.0098					19.5		17.5	3.8
Si7110DN	20	20	0.0053	0.0078							21.1		14	3.8
Si7112DN	30	12	0.0066	0.0076							35		21	52
Si7114DN	30	20	0.0075	0.01							18.3		12.5	3.8
Si7806ADN	30	20	0.011	0.016						b	14		13.2	3.7
Si7230DN	30	20	0.012	0.016						b	14		13.2	3.7
Si7804DN	30	20	0.0185	0.03						b	10		8.7	3.5
Si7326DN	30	20	0.0195	0.03						b	10		8.7	3.5
Si7116DN	40	20	0.0078	0.01							16.4		15	3.8
Si7120DN	60	20	0.019	0.028							10	30		3.8
Si7414DN	60	20	0.025	0.036							8.7	16		3.8
Si7308DN	60	20	0.058	0.072							6	13	6	19.8

Notes:

a. Q_g @ V_{GS} = 15 V (vs. 10 V)
b. Q_g @ V_{GS} = 5 V (vs. 4.5 V)
c. $r_{DS} = r_{SS}/2$
d. $r_{DS(ON)}$ @ V_{GS} = 6 V (vs. 4.5 V)
e. $r_{DS(ON)}$ @ V_{GS} = 3 V (vs. 3.3 V)
f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
l. Not used
m. Schottky connected to channel 1
n. Half-bridge
o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

N-channel, continued

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
Si7812DN	75	20	0.037	0.046							16	16	8	52
Si7810DN	100	20	0.062	0.084						d	5.4	13		3.8
Si7818DN	150	20	0.135	0.142						d	3.4	20		3.8
Si7820DN	200	20	0.24	0.25						d	2.6	12.1		3.8
Si7802DN	250	20	0.435	0.445						d	1.95	14		3.8
TSOP-6														
Si3460BDV	20	8		0.027		0.032	0.04				8		9	3.5
Si3446ADV	20	12		0.037		0.065					6	13	5.6	3.2
Si3442BDV	20	12		0.057		0.09					4.2		3	1.67
Si3434DV	30	12		0.034		0.05					6.1		8	2
Si3424BDV	30	20	0.028	0.038							8	13.05	6.2	2.98
Si3456BDV	30	20	0.035	0.052							6	8.6		2
Si3454ADV	30	20	0.06	0.085							4.5	9		2
Si3458DV	60	20	0.1	0.13							3.2	8		2
Si3430DV	100	20	0.17	0.185						d	2.4	5.5		2
Si3440DV	150	20	0.375	0.4						d	1.5	5.4		2
SOT-23														
Si2312BDS	20	8		0.031		0.037	0.047				5		7.5	1.25
Si2314EDS	20	12		0.033		0.04	0.051				4.9		11	1.25
Si2302ADS	20	8		0.085		0.115					2.4		4	0.9
TN0200K	20	8		0.4		0.5					0.73		1.4	0.35
TN0201K	20	20	1	1.4							0.42	1		0.35
Si2306BDS	30	20	0.047	0.065						b	4		3	1.25
Si2316BDS	30	20	0.05	0.08							4.5	6.35	3.16	1.66
Si2304BDS	30	20	0.07	0.105						b	3.2		2.6	1.08
Si2318DS	40	20	0.045	0.058							3.9	10		1.25
Si2308DS	60	20	0.16	0.22							2	4.8		1.25
2N7002K	60	20	2	4							0.3		0.4	0.35
2N7002E	60	20	3	4							0.25	0.4		0.35
Si2328DS	100	20	0.25								1.5	3.3		1.25
TN2404K	240	20	4	4		6					0.2	4.87		0.36

Notes:

a. Q_g @ V_{GS} = 15 V (vs. 10 V)
b. Q_g @ V_{GS} = 5 V (vs. 4.5 V)
c. $r_{DS} = r_{SS}/2$
d. $r_{DS(ON)}$ @ V_{GS} = 6 V (vs. 4.5 V)
e. $r_{DS(ON)}$ @ V_{GS} = 3 V (vs. 3.3 V)
f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
l. Not used
m. Schottky connected to channel 1
n. Half-bridge
o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

N-channel, continued

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
PowerPAK ChipFET														
Si5486DU	20	8		0.015		0.017	0.021				12		21	31
Si5484DU	20	12		0.016		0.021					12	35.5	16.5	31
Si5482DU	30	12	0.015	0.0175							12	34	16	31
Si5480DU	30	20	0.016	0.022							12	22.5	11	31
Si5476DU	60	20	0.034	0.041							12	21	10.5	31
1206-8 ChipFET														
Si5406DC	12	8		0.02		0.025					9.5		13.7	2.5
Si5404BDC	20	12		0.028		0.039					7.5		7	2.5
Si5424DC	30	25	0.024	0.03							6	21	11	9
Si5402BDC	30	20	0.035	0.042							6.7	10		2.5
SC70														
Si1450DH	8	5		0.047		0.051	0.058	0.069			6.04		4.24	2.78
Si1488DH	20	8		0.049		0.056	0.065				6.1		6	2.8
Si1410EDH	20	12		0.07		0.08	0.1				3.7		5.6	1.56
Si1400DL	20	12		0.15		0.235					1.7		2.1	0.625
Si1300BDL	20	8		0.85		1.08					0.4		0.56	0.2
Si1470DH	30	12		0.066		0.095					5.1		4.85	2.8
Si1472DH	30	20	0.057	0.082							5.6	7	3.3	2.8
Si1426DH	30	20	0.075	0.115							3.6		1.9	1.6
Si1304BDL	30	12		0.29		0.385					0.9		1.8	0.37
Si1302DL	30	20	0.48	0.7							0.64	0.86		0.31
Si1330EDL	60	20	2.5	3	8					e	0.25		0.4	0.31
PowerPAK SC-70														
SiA414DJ	8	5		0.011		0.013	0.016	0.022	0.041		12		19	19
SC75A														
Si1046R	20	8		0.42		0.501	0.66				0.606		0.92	0.25
Si1012R	20			0.7		0.85	1.25				0.5		0.75	0.15
Si1032R	20			5		7	9				0.14		0.75	0.2
Si1022R	60		1.25	3							0.33			0.25
PowerPAK SC-75														
SiB414DK	8	5		0.026		0.03	0.037	0.052	0.089		9		8.6	13

Notes:

a. Q_g @ V_{GS} = 15 V (vs. 10 V)
b. Q_g @ V_{GS} = 5 V (vs. 4.5 V)
c. $r_{DS} = r_{SS}/2$
d. $r_{DS(ON)}$ @ V_{GS} = 6 V (vs. 4.5 V)
e. $r_{DS(ON)}$ @ V_{GS} = 3 V (vs. 3.3 V)
f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
l. Not used
m. Schottky connected to channel 1
n. Half-bridge
o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

N-channel, continued

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
SiB412DK	20	8		0.034		0.04	0.054				9		6.14	13
SC89-6														
Si1050X	8	5		0.086		0.093	0.102	0.12			1.34		7.1	0.236
Si1056X	20	8		0.089		0.098	0.121				1.32		5.2	0.236
Si1058X	20	12		0.091		0.124					1.3		3.51	0.236
Si1046X	20	8		0.42		0.501	0.66				0.606		0.92	0.25
Si1012X	20			0.7		0.85	1.25				0.5		0.75	0.25
Si1032X	20			5		7	9				0.14		0.75	0.2
Si1070X	30	12		0.099		0.14					1.2		3.5	0.236
Si1072X	30	20	0.093	0.129							1.3	5.5	2.7	0.236
MICRO FOOT														
Si8404DB	8	5		0.031		0.033	0.035	0.043			12.2		20	6.25
Si8424DB	8	5		0.031		0.033	0.035	0.043	0.077		12.2		20	6.25
Si8402DB	20	8		0.037		0.039	0.043				7.3		17	2.77
Dual N-Channel														
PowerPAK SO-8														
Si7236DP	20	12		0.0052		0.007					60	68	31	46
Si7844DP	30	20	0.022	0.03							10	13		3.5
Si7958DP	40	20	0.0165	0.02							11.3	50		3.5
Si7962DP	40	20	0.017								11.1	46.2		3.5
Si7960DP	60	20	0.021	0.025							9.7	49		3.5
Si7964DP	60	20	0.023								9.6	43		3.5
Si7942DP	100	20	0.049	0.06						d	5.9	16		3.5
Si7956DP	150	20	0.105	0.115						d	4.1	17		3.5
Si7946DP	150	20	0.15	0.168						d	3.3	12.6		3.5
SO-8														
Si9926BDY	20	12		0.02		0.03					8.2		11	2
Si4952DY	25	16	0.023	0.028							8	12	5.5	2.8
Si4944DY	30	20	0.0095	0.016							12.2		13.5	2.3
Si4922BDY	30	12	0.016	0.018		0.024					8	41	19	3.1
Si4330DY	30	20	0.0165	0.022							8.7		13	2

Notes:
a. Q_g @ V_{GS} = 15 V (vs. 10 V)
b. Q_g @ V_{GS} = 5 V (vs. 4.5 V)
c. $r_{DS} = r_{SS}/2$
d. $r_{DS(ON)}$ @ V_{GS} = 6 V (vs. 4.5 V)
e. $r_{DS(ON)}$ @ V_{GS} = 3 V (vs. 3.3 V)
f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
l. Not used
m. Schottky connected to channel 1
n. Half-bridge
o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

N-channel, continued

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
SO-8 (Continued)														
Si4936BDY	30	20	0.035	0.051							6.9	9.1	4.5	2.8
Si4904DY	40	16	0.016	0.019							8	56	26	3.25
Si4910DY	40	16	0.027	0.032							7.6	21	9.6	3.1
Si4906DY	40	16	0.039	0.05							6.6	14.4	6.6	3.1
Si4908DY	40	16	0.06	0.07							5	8	3.7	2.75
Si4946BEY	60	20	0.041	0.052						b	6.5	17	9.2	3.7
Si4900DY	60	20	0.058	0.072							5.3	13	6	3.1
Si4992EY	75	20	0.048	0.062							4.8	14		2.4
TSSOP-8														
Si6926ADQ	20	8		0.03	0.033	0.035	0.043			e	4.5		7.5	1
Si6925ADQ	20	12		0.045	0.055	0.065				e	3.9		4	1.13
Si6928DQ	30	20	0.035	0.05							4		9	1
Si6954ADQ	30	20	0.053	0.075							3.4	8		1
PowerPAK 1212-8														
Si7904BDN	20	8		0.03		0.036	0.045				6		9	17.8
Si7218DN	30	20	0.025	0.033							24	11	5	23
Si7212DN	30	12	0.036	0.039							6.8		7	2.6
Si7214DN	30	20	0.04	0.047							6.4		4.2	2.6
Si7216DN	40	20	0.032	0.039							6	12.5	5.5	20.8
Si7222DN	40	12	0.042	0.047							6	19	8	17.8
Si7220DN	60	20	0.06	0.075							4.8	13		2.6
Si7922DN	100	20	0.195	0.23						d	2.5	5.2		2.6
TSOP-6														
Si3900DV	20	12		0.125		0.2					2.4		2.1	1.15
Si3948DV	30	20	0.105	0.175							2.5		2.1	1.15
PowerPAK ChipFET														
Si5938DU	20	8		0.039		0.045	0.055				6		6	8.3
Si5944DU	40	20	0.112	0.171							6	4.4	2.2	10
1206-8 ChipFET														
Si5920DC	8	5		0.032		0.036	0.045	0.054			8.4		7.3	3.12

Notes:

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b. Q_g @ V_{GS} = 5 V (vs. 4.5 V)
c. $r_{DS} = r_{SS}/2$
d. $r_{DS(ON)}$ @ V_{GS} = 6 V (vs. 4.5 V)
e. $r_{DS(ON)}$ @ V_{GS} = 3 V (vs. 3.3 V)
f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
l. Not used
m. Schottky connected to channel 1
n. Half-bridge
o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

N-channel, continued

Part Number	V_{DS} (V)	V_{GS} (V)	$r_{DS(on)}$ Ω							Footnote	I_D (A)	Q_g (nC)		P_D (W)
			V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 3.3 V	V_{GS} = 2.5 V	V_{GS} = 1.8 V	V_{GS} = 1.5 V	V_{GS} = 1.2 V			V_{GS} = 10 V	V_{GS} = 4.5 V	
Si5908DC	20	8		0.04		0.045	0.052				5.9		5	2.1
Si5904DC	20	12		0.075		0.134					4.2		4	2.1
Si5902BDC	30	20	0.065	0.1							4	4.5	2	3.12
SC70-6														
Si1988DH	20	8		0.168		0.2	0.25				1.3		1.6	1.25
Si1958DH	20	12		0.205		0.34					1.3	2.5	1.2	1.25
Si1912EDH	20	12		0.28		0.36	0.45				1.28		0.65	0.74
Si1902DL	20	12		0.385		0.63					0.7		0.8	0.3
Si1970DH	30	12		0.225		0.345					1.3	2.5	1.15	1.25
Si1972DH	30	20	0.19	0.344							1.3		0.91	1.25
PowerPAK SC-70														
SiA912DJ	12	8		0.04		0.048	0.063				4.5		4.5	6.5
SiA914DJ	20	8		0.053		0.063	0.077				4.5		4.1	6.5
SC89-6														
Si1024X	20			0.7		0.85	1.25				0.5		0.75	0.25
Si1034X	20			5		7	9				0.14		0.75	0.2
Si1026X	60		1.4	3							0.33		0.6	0.25

Notes:

a. Q_g @ V_{GS} = 15 V (vs. 10 V)
b. Q_g @ V_{GS} = 5 V (vs. 4.5 V)
c. $r_{DS} = r_{SS}/2$
d. $r_{DS(ON)}$ @ V_{GS} = 6 V (vs. 4.5 V)
e. $r_{DS(ON)}$ @ V_{GS} = 3 V (vs. 3.3 V)
f. $r_{DS(ON)}$ @ V_{GS} = 3.7 V (vs. 3.3 V)
g. $r_{DS(ON)}$ @ V_{GS} = 4.75 V (vs. 4.5 V)
h. $r_{DS(ON)}$ @ V_{GS} = 2.7 V (vs. 2.5 V or 3.3 V)
i. Not used
j. $r_{DS(ON)}$ @ V_{GS} = 3.1 V (vs. 3.3 V)
k. S1 and D2 connected
l. Not used
m. Schottky connected to channel 1
n. Half-bridge
o. Not used
p. $r_{DS(ON)}$ @ V_{GS} = 3.6 V (vs. 3.3 V)
q. Q_g @ V_{GS} = 6 V (vs. 4.5 V)
r. $r_{DS(ON)}$ @ V_{GS} = 8 V (vs. 4.5 V)
s. $r_{DS\ (on)}$ @ V_{GS} = 15 V (vs. 10 V)
t. $r_{DS\ (on)}$ @ V_{GS} = 5 V (vs. 4.5 V)

Packaging Information

Power MOSFET Packages*		Max Length (mm)	Max Width (mm)	Max Footprint Area (mm^2)	Max Height (mm)	Max Current (A)	Max Temp (°C)	R_{thJF} or R_{thJC} (°C/W)
TO-220		10.41	4.7	48.93	29.71	85	175	0.6
TO-262		10.41	4.7	48.93	25.27	85	175	0.6
D^2PAK		15.88	10.41	165.37	4.83	110	175	0.4
						85	175	0.6
D^2PAK-5						60	175	0.5
DPAK		10.41	6.73	70.06	2.38	70	175	1.2
TO-92/TO-92S		4.7	3.68	17.30	19.94	0.67	150	1.2
PolarPAK		6.3	5.31	33.45	0.85	45	150	1.0 + 1.0
PowerPAK SO-8		6.2	5.26	32.61	1.2	29	150	1.5
SO-16		10	6.2	62.00	1.75	13.5	150	20
SO-8		5	6.2	31.00	1.75	25	150	16
TSSOP-8		3.1	6.6	20.46	1.2	11	150	52
PowerPAK 1212-8		3.4	3.4	11.56	1.2	14.4	150	2.4
PowerPAK 2 x 5		5.10	2.15	10.97	0.84	7	150	6
TSOP-6		3.1	2.98	9.24	1.1	6.8	150	30
PowerPAK ChipFET		3.08	1.98	6.10	0.85	11.6	150	4
ChipFET 1206-8		3.1	1.915	5.58	1.1	9.5	150	20
SOT-23		3.04	2.64	8.03	1.12	4.9	150	50
PowerPAK SC-70		2.15	2.15	4.62	0.8	12	150	6.5
SC-70		2.2	2.4	5.28	1.1	3.9	150	45

* To view drawings of any of the products above in PDF form, go to ***http://www.vishay.com/mosfets/related#pkgdrw***

For technical support, contact
pmos.techsupport@vishay.com

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Packaging Information, continued

Power MOSFET Packages*		Max Length (mm)	Max Width (mm)	Max Footprint Area (mm^2)	Max Height (mm)	Max Current (A)	Max Temp (°C)	R_{thJF} or R_{thJC} (°C/W)
MICRO FOOT		See individual datasheet			0.65	7	150	20
PowerPAK SC-75		1.7	1.7	2.89	0.8	8	150	9.5
SC-75A		1.6	1.7	2.72	0.8	0.5	150	
SC-89		1.7	1.7	2.89	0.6	0.5	150	

***** To view drawings of any of the products above in PDF form, go to ***http://www.vishay.com/mosfets/related#pkgdrw***