Ordering number : ENA1084

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

CPH6341 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- High-speed switching.
- 4V drive

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−30	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		−5	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−20	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm²×0.8mm)	1.6	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−30V, V_{GS}=0V			−1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=−10V, I_D=−1mA	−1.2		−2.6	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=−10V, I_D=−3A	2.8	4.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	I_D=−3A, V_{GS}=−10V		45	59	mΩ
	$R_{DS(on)2}$	I_D=−1.5A, V_{GS}=−4.5V		71	100	mΩ
	$R_{DS(on)3}$	I_D=−1.5A, V_{GS}=−4V		82	115	mΩ

Marking : YT

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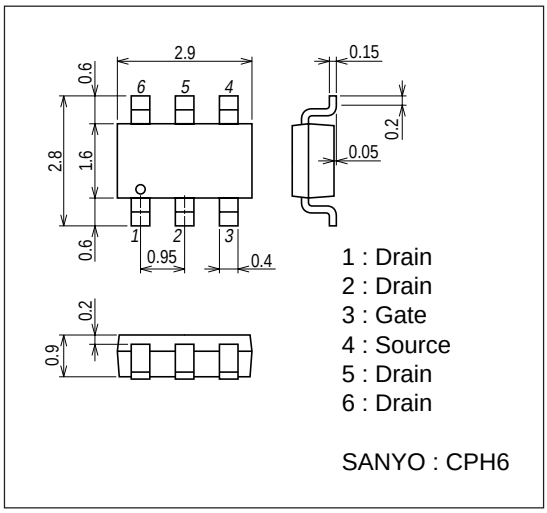
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=−10V, f=1MHz		430		pF
Output Capacitance	Coss	V_{DS}=−10V, f=1MHz		105		pF
Reverse Transfer Capacitance	Crss	V_{DS}=−10V, f=1MHz		75		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		7.5		ns
Rise Time	t_{r}	See specified Test Circuit.		26		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit.		45		ns
Fall Time	t_{f}	See specified Test Circuit.		35		ns
Total Gate Charge	Qg	V_{DS}=−15V, V_{GS}=−10V, I_{D}=−5A		10		nC
Gate-to-Source Charge	Qgs	V_{DS}=−15V, V_{GS}=−10V, I_{D}=−5A		2.0		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=−15V, V_{GS}=−10V, I_{D}=−5A		2.5		nC
Diode Forward Voltage	V_{SD}	I_{S}=−5A, V_{GS}=0V		−0.87	−1.2	V

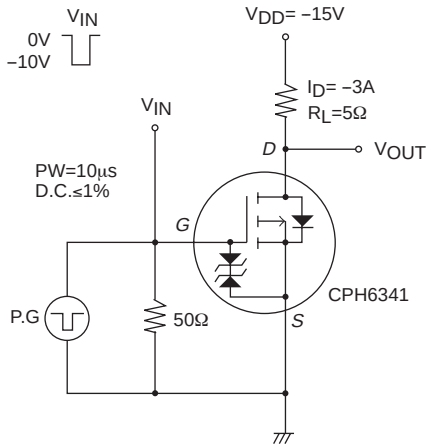
Package Dimensions

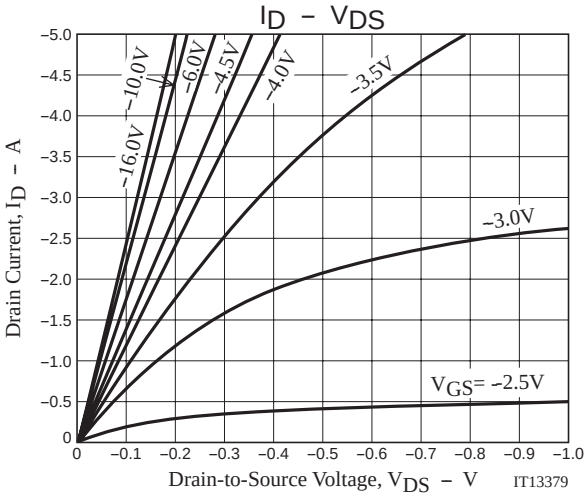
unit : mm (typ)

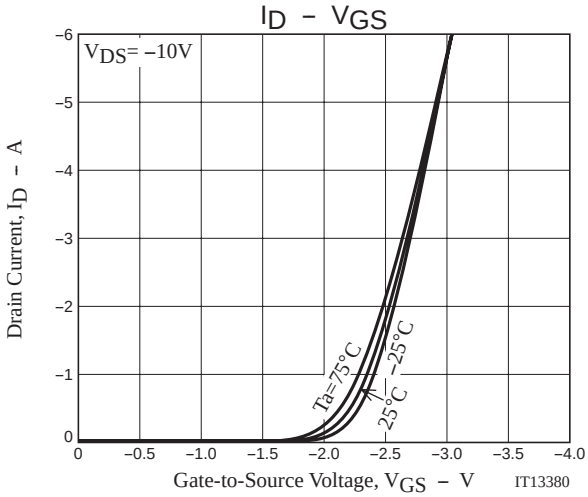
7018A-003

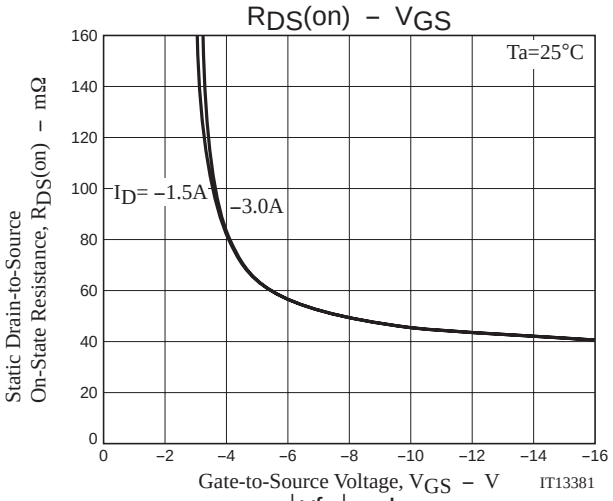


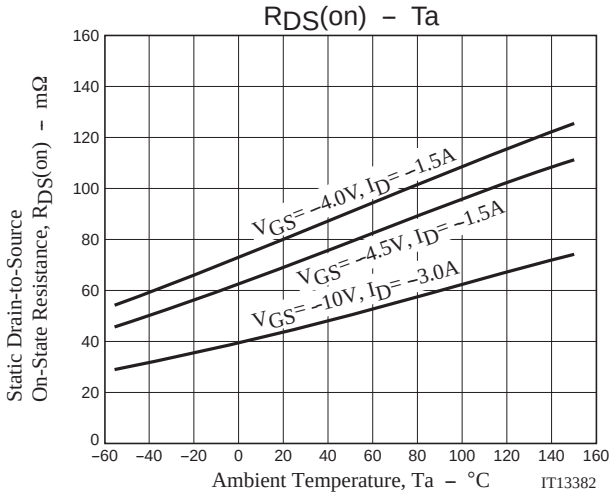
Switching Time Test Circuit

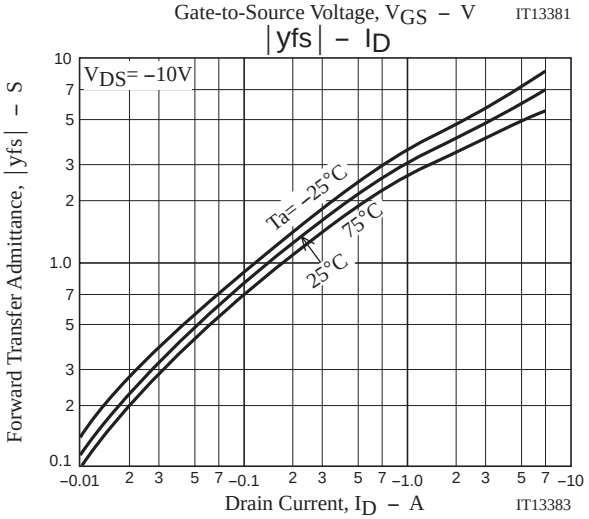


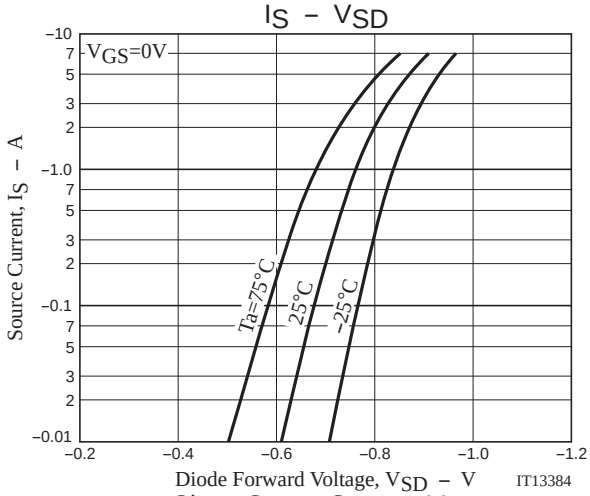


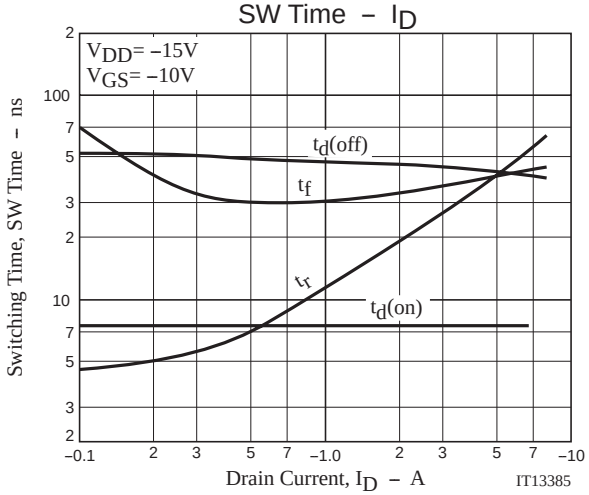


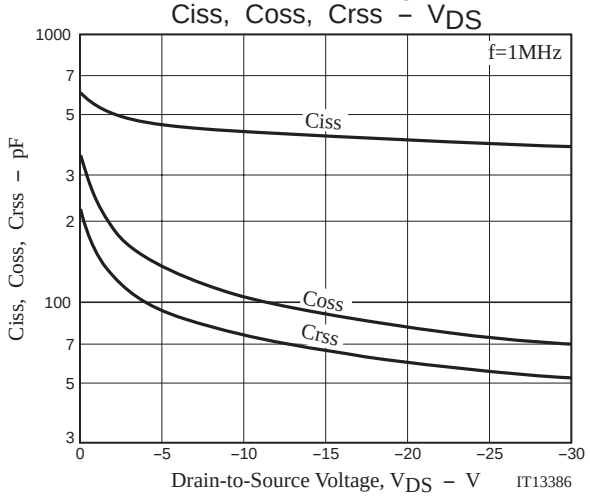

RDS(on) – VGS
Ta=25°C
ID= –1.5A
–3.0A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT13381

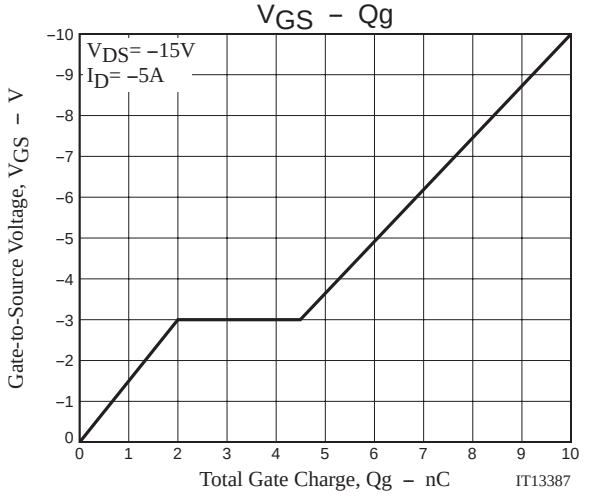

RDS(on) – Ta
VGS= –4.0V, ID= –1.5A
VGS= –4.5V, ID= –1.5A
VGS= –10V, ID= –3.0A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT13382

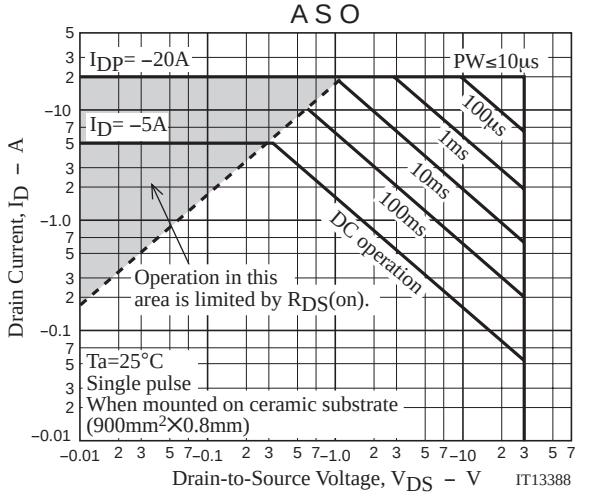

|yfs| – ID
VDS= –10V
Ta= –25°C
75°C
25°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT13383

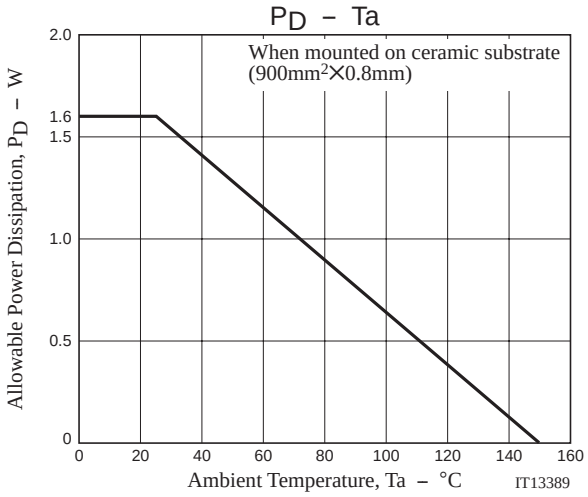

IS – VSD
VGS=0V
Ta=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT13384


SW Time – ID
VDD= –15V
VGS= –10V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT13385


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT13386


VGS – Qg
VDS= –15V
ID= –5A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT13387


A S O
IDP= –20A
PW≤10μs
ID= –5A
100μs
1ms
10ms
100ms
DC operation
Operation in this area is limited by RDS(on).
Ta=25°C
Single pulse
When mounted on ceramic substrate (900mm²×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT13388



Note on usage : Since the CPH6341 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.