



HIGH-PERFORMANCE GEN 5.0 SCHOTTKY DIODES

New 45-V Family Targets High-Temperature Applications



5th Generation High-Performance 45-V Schottky Diodes Offer T_j Max of +175 °C for High-Temperature Applications

FEATURES

- Built on submicron trench technology
- Very low typical forward voltage drop of < 0.50 V at rated current
- Extremely low typical reverse leakage: 40 % lower than planar technology
- T_j max of 175 °C allows use in automotive applications
- Trench technology increases package power density
 - Improves cost/ampere ratio by 15 %.
- 30 % better ruggedness for reverse avalanche capability
- Full lead (Pb)-free and RoHS compliant devices

BENEFITS

- Optimized for high-frequency-high efficiency SMPS
- Breakdown voltage (> 57 V typical) protects against voltage spikes and improves power density
- Optimized V_F and leakage vs. $R_{th(j-c)}$
- Improved package current density
 - 2 x 10 A DPAK device serves as compact, high-performance, and cost-effective alternative to D²PAK
- Very tight parameter distribution
- Reverse biased safe operating area (RBSOA) available for tight and cost-effective designs
- Negligible switching losses
- Avalanche rated – 100 % tested
- High maximum junction temperature and high leakage control, optimized for photovoltaic cell bypass diode applications

Datasheet is available on our web site at www.vishay.com for High Performance Gen 5.0 Schottky Diode - http://www.vishay.com/ref/HPS_Gen5



High Performance Schottky Generation 5.0 series

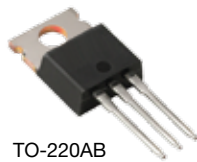
High Power Products

Applications

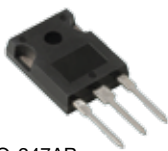
- Automotive
 - 175 °C maximum junction temperature
- Solar applications as by-pass diode
 - Low forward voltage and extremely low reverse leakage
- Secondary rectification in high-efficiency, high-frequency 40-W to 800-W SMPS
- AC/DC and DC/DC general-purpose applications
- High-efficiency audio systems
- Mobile electronics such as notebook computers, cell phones, and portable media players
- Cost-effective alternative to synchronous rectification

Device	$I_{F(AV)}$	@ TC	$V_{FM} @ 125^{\circ}C$ (Typ) (V)	Reverse Leakage (Typ)		EA S (mJ)	T_J max	Package
				@ 25 °C (μA)	@ 125 °C (μA)			
30CTT045	2 x 15 A	163 °C	0.5 at 15 A	3	2	55	175 °C	TO-220AB
60CPT045	2 x 30 A	159 °C	0.5 at 30 A	8	5	140	175 °C	TO-247AB

Packages

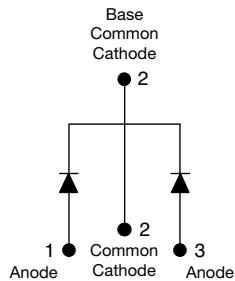


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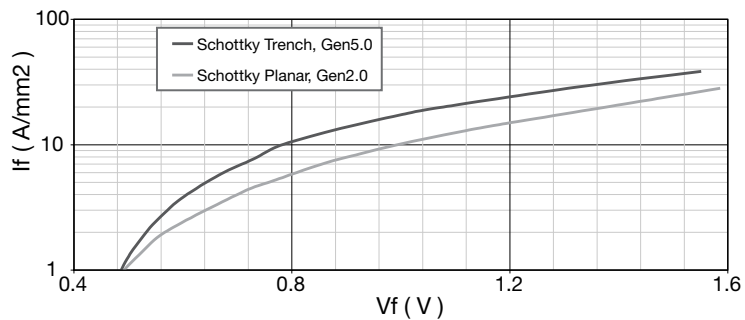


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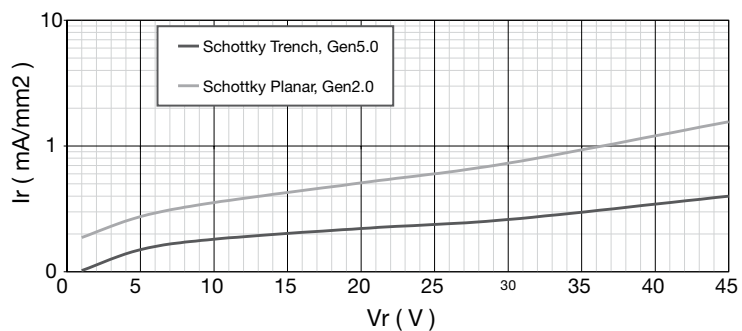
Circuit Configuration



Typical Forward Characteristics



Typical Reverse Characteristics



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