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 D^2PAK
- Very tight parameter distribution
- Reverse biased safe operating area (RBSOA) available for tight and cost-effective designs
- Negligible switching losses

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

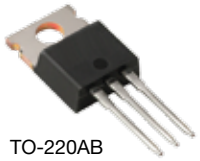
High Power Products

Applications

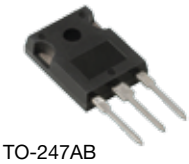
- Automotive
  - 175 °C maximum junction temperature
- Solar applications as by-pass diode
  - Low forward voltage and extremely low reverse leakage
- Secondary rectification in high-efficiency, high-frequency 40-W to 800-W SMPS
- AC/DC and DC/DC general-purpose applications
- High-efficiency audio systems
- 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°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

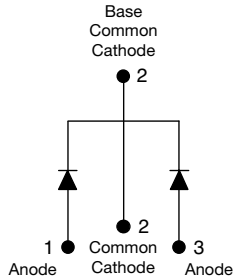


TO-220AB

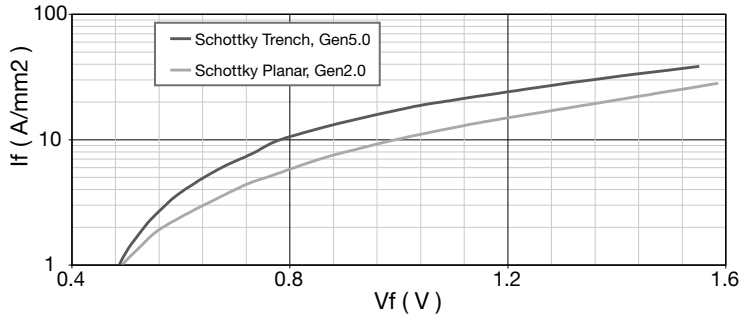


TO-247AB

Circuit Configuration



Typical Forward Characteristics



Typical Reverse Characteristics