Technical Data
Data Sheet 2889, Rev. -

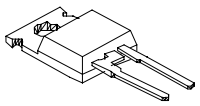
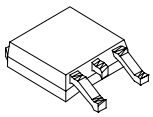
20TQ035/S/20TQ040/S/20TQ045/S
SCHOTTKY RECTIFIER

Applications:

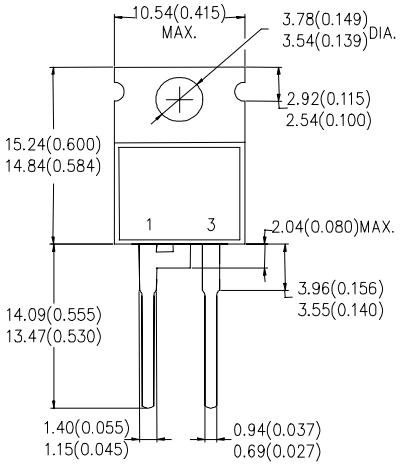
- **Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection**

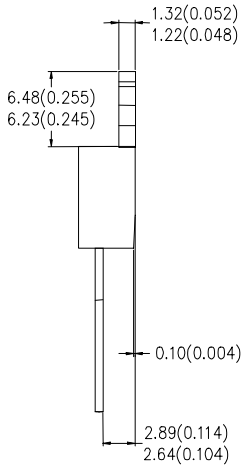
Features:

- **150°C T_J operation**
- **High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance**
- **Low forward voltage drop**
- **High frequency operation**
- **Guard ring for enhanced ruggedness and long term reliability**

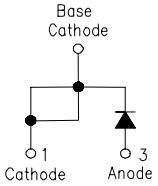
Case styles	
20TQ…	**20TQ…S**
	
TO-220AC	**D^2PAK**

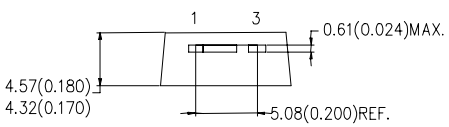
Mechanical Dimensions: In Inches / mm





TO-220AC





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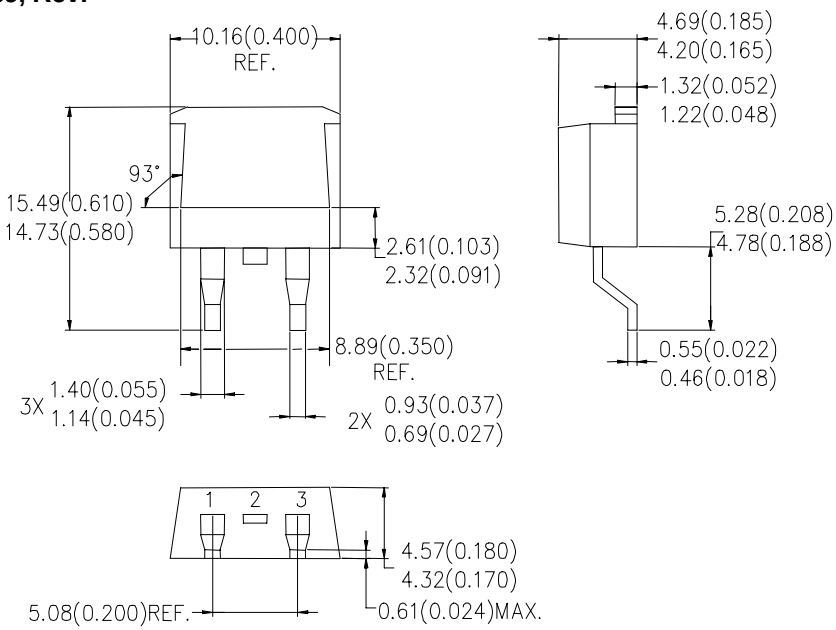
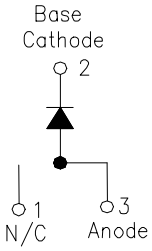
D²PAK





Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	V_{RWM}	-	35(20TQ035) 40(20TQ040) 45(20TQ045)	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @T_C = 116 °C, rectangular wave form	20	A
Max. Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3 ms, half Sine pulse	480	A
Non-Repetitive Avalanche Energy	E_{AS}	T_J = 25 °C, I_{AS} = 4 A, L = 3.4 mH	27	mJ
Repetitive Avalanche Current	I_{AR}	Current decaying linearly to zero in 1 µsec Frequency limited by T_J max. V_A = 1.5 x V_R typical	4	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop *	V_{F1}	@ 20 A, Pulse, T_J = 25 °C @ 40 A, Pulse, T_J = 25 °C	0.57 0.73	V
	V_{F2}	@ 20 A, Pulse, T_J = 125 °C @ 40 A, Pulse, T_J = 125 °C	0.51 0.67	V
Max. Reverse Current *	I_{R1}	@V_R = Rated V_R, Pulse, T_J = 25 °C	2.7	mA
	I_{R2}	@V_R = Rated V_R, Pulse, T_J = 125 °C	105	mA
Max. Junction Capacitance	C_T	@V_R = 5 V, T_C = 25 °C f_{SIG} = 1 MHz	1400	pF
Typical Series Inductance	L_S	Measured lead to lead 5 mm from package body	8.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/µs

* Pulse Width < 300µs, Duty Cycle < 2%

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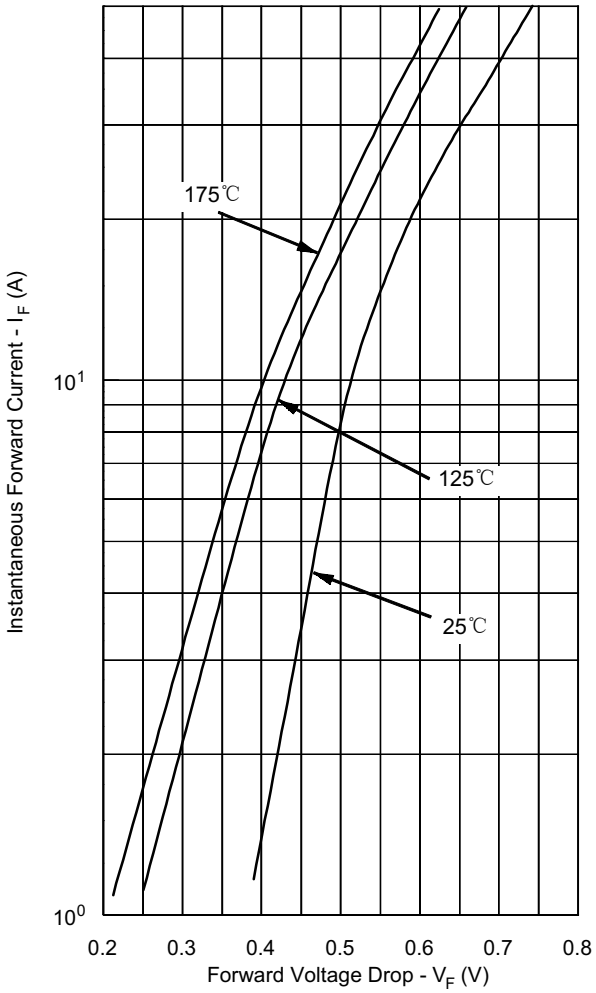
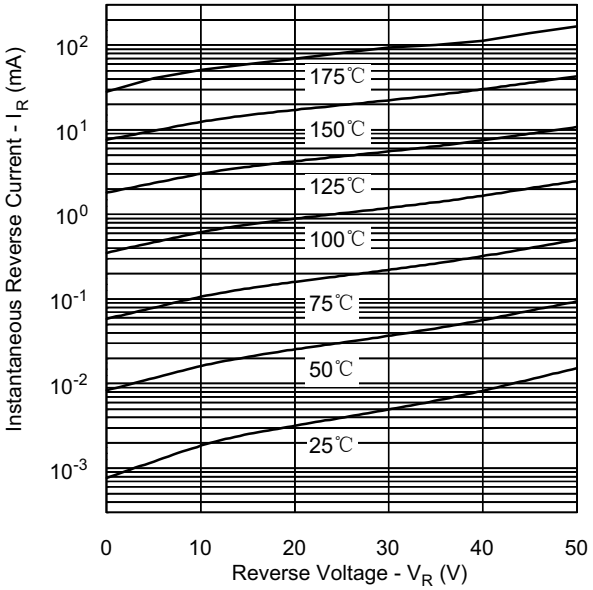
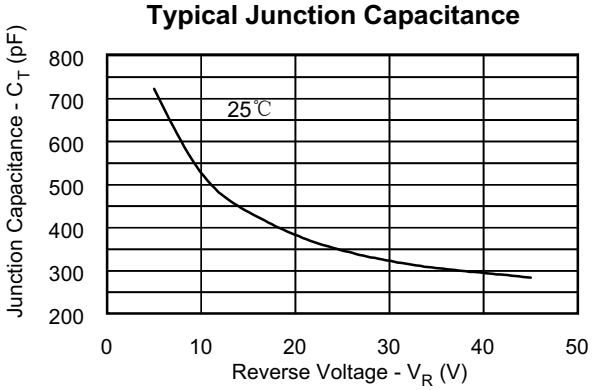
Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T_J	-	-55 to +150	°C
Max. Storage Temperature	T_{stg}	-	-55 to +150	°C
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	1.50	°C/W
Typical Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.50	°C/W
Approximate Weight	wt	-	2	g
Mounting Torque	T_M	-	6 (min) 12 (max)	Kg-cm
Case Style	TO-220AC D^2PAK (Suffix "s" for D^2PAK; "MBRB xxxx" for D^2PAK)			

Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance