

Technical Data  
 Data Sheet 2889, Rev. -

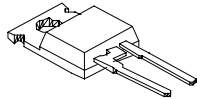
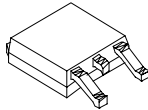
**20TQ035/S/20TQ040/S/20TQ045/S**  
**SCHOTTKY RECTIFIER**

**Applications:**

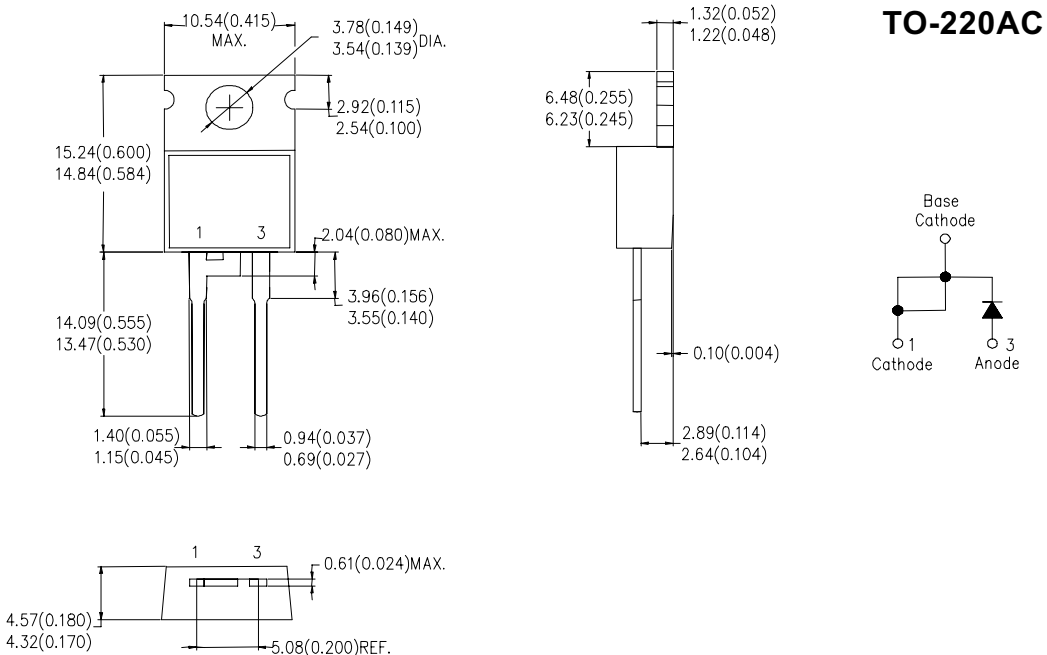
- Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection

**Features:**

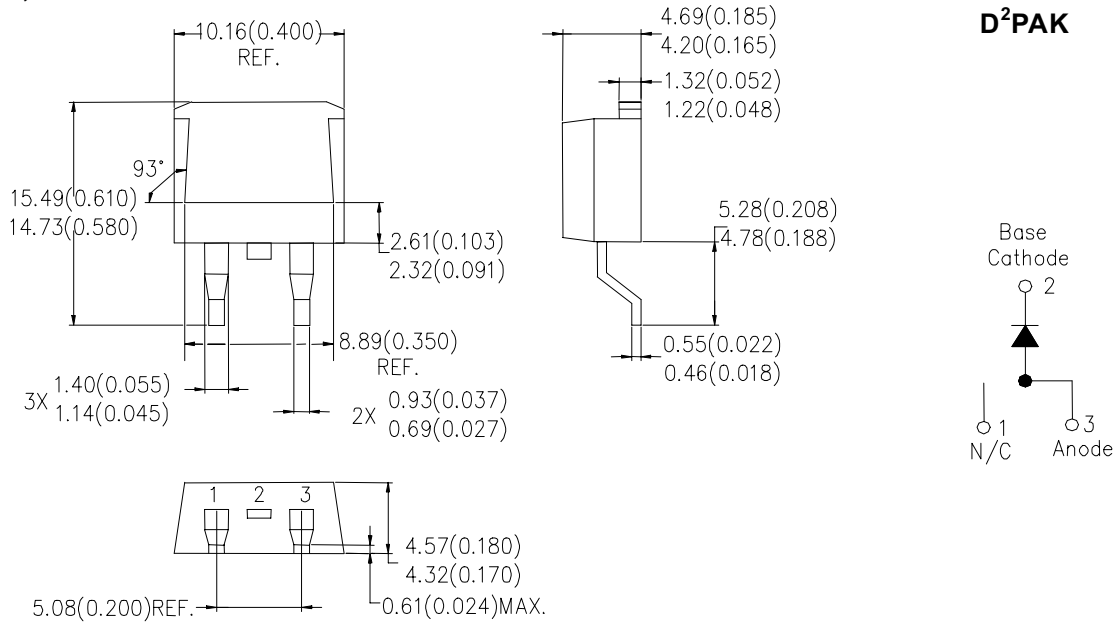
- 150°C T<sub>J</sub> operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability

Case styles	
<p><b>20TQ...</b></p>  <p><b>TO-220AC</b></p>	<p><b>20TQ...S</b></p>  <p><b>D<sup>2</sup>PAK</b></p>

**Mechanical Dimensions: In Inches / mm**



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**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 @ $T_C = 116^\circ\text{C}$ , 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	$E_{AS}$	$T_J = 25^\circ\text{C}$ , $I_{AS} = 4\text{ A}$ , $L = 3.4\text{ mH}$	27	mJ
Repetitive Avalanche Current	$I_{AR}$	Current decaying linearly to zero in 1 $\mu\text{sec}$ Frequency limited by $T_J$ max. $V_A = 1.5 \times V_R$ typical	4	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop *	$V_{F1}$	@ 20 A, Pulse, $T_J = 25^\circ\text{C}$	0.57	V
		@ 40 A, Pulse, $T_J = 25^\circ\text{C}$	0.73	
	$V_{F2}$	@ 20 A, Pulse, $T_J = 125^\circ\text{C}$	0.51	V
		@ 40 A, Pulse, $T_J = 125^\circ\text{C}$	0.67	
Max. Reverse Current *	$I_{R1}$	@ $V_R = \text{Rated } V_R$ , Pulse, $T_J = 25^\circ\text{C}$	2.7	mA
		$I_{R2}$	@ $V_R = \text{Rated } V_R$ , Pulse, $T_J = 125^\circ\text{C}$	105
Max. Junction Capacitance	$C_T$	@ $V_R = 5\text{ V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$	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/ $\mu\text{s}$

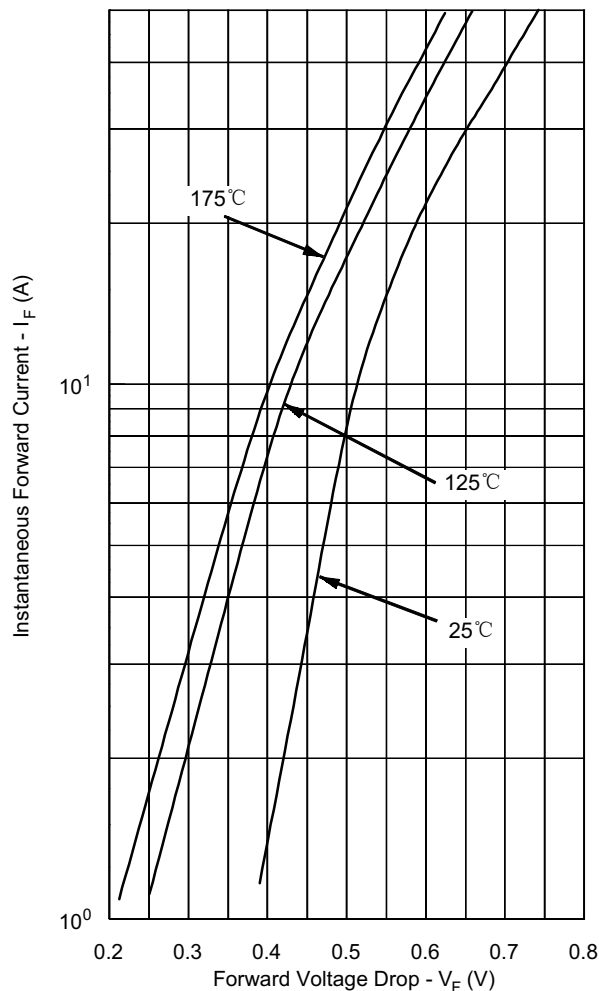
\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

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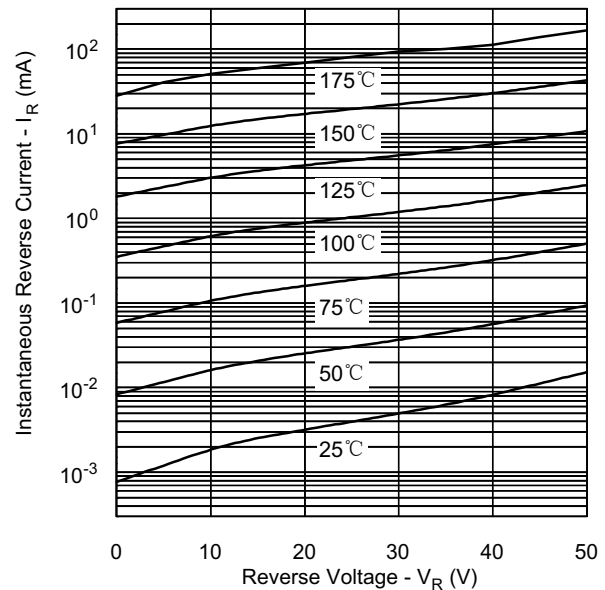
**Thermal-Mechanical Specifications:**

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 <sup>2</sup> PAK (Suffix "s" for D <sup>2</sup> PAK; "MBRB xxxx" for D <sup>2</sup> PAK)			

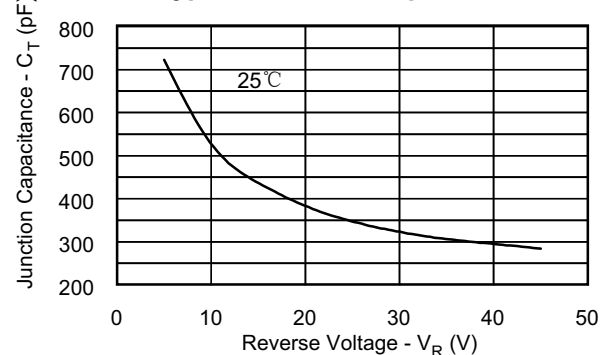
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



**TECHNICAL DATA**

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