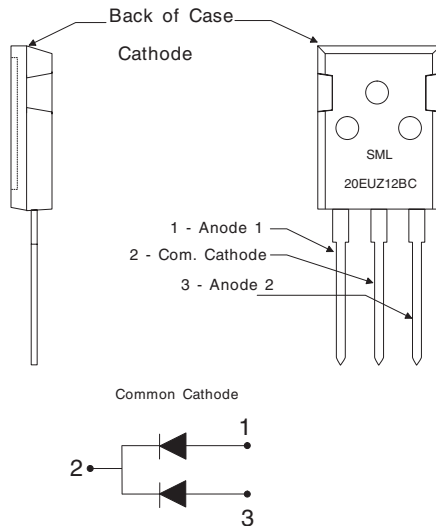


## Enhanced Ultrafast Recovery Diode 1200 Volt, 2 x 20 Amp



See Package outline for mechanical data and more details

### TO247 Package

### Key Parameters

$V_R$ (max)	1200V
$V_F$ (typ)	3.2V
$I_F$ (max)	2 x 20A
$t_{rr}$ (max)	40ns

### TECHNOLOGY

The planar passivated and enhanced ultrafast recovery diode features a triple charge control action utilising Semelab's Graded Buffer Zone technology combined with low emitter efficiency and local lifetime control techniques.

### BENEFITS

- Very fast recovery for low switching losses
- Ultra soft recovery with low EMI generation
- High dynamic ruggedness under all conditions
- Low temperature dependency
- Low on-state losses with positive temperature coefficient
- Stable blocking voltage and low leakage current
- Avalanche rated for high reliability circuit operation

### APPLICATIONS

- Freewheeling Diode for IGBTs and MOSFETs
- Uninterruptible Power Supplies UPS
- Switch Mode Power Supplies SMPS
- Inverse and Clamping Diode
- Snubber Diode
- Fast Switching Rectification

### ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^\circ C$ unless otherwise stated)

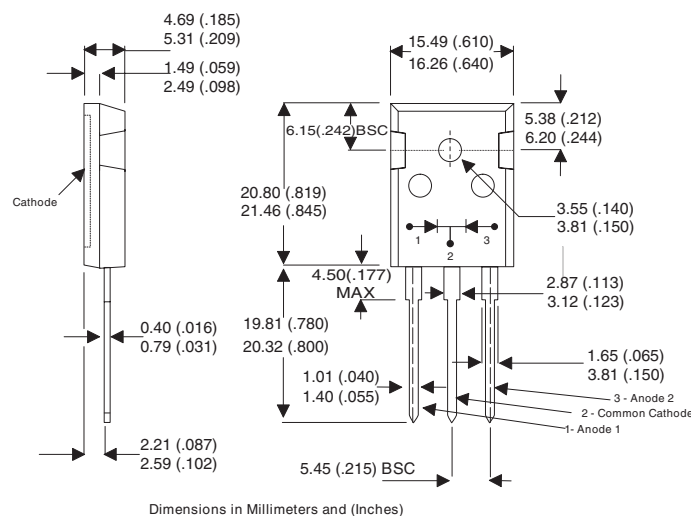
$V_{RRM}$	Peak Repetitive Reverse Voltage	1200V
$V_R$	DC Reverse Blocking Voltage	1200V
$I_{FAV}$	Average Forward Current @ $T_C = 85^\circ C$	20A
$I_{FSM(surge)}$	Repetitive Forward Current	50A
$I_{FS(surge)}$	Non-Repetitive Forward Current	200A
$P_D$	Power Dissipation @ $T_C = 85^\circ C$	70W
$W_{AVL}$	Avalanche Energy (L=40mH)	20mJ
$T_J, T_{STG}$	Operating & Storage Junction Temperature	-55 to $150^\circ C$

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## ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
<b>STATIC ELECTRICAL CHARACTERISTIC</b>						
V <sub>F</sub>	Forward Voltage Drop	I <sub>F</sub> = 20A    T <sub>j</sub> = 25°C		3.2	3.5	V
		I <sub>F</sub> = 20A    T <sub>j</sub> = 125°C			3.7	
		I <sub>F</sub> = 10A    T <sub>j</sub> = 25°C		2.5		
I <sub>R</sub>	Leakage Current	V <sub>R</sub> = 1200V    T <sub>j</sub> = 25°C		0.7	500	μA
		V <sub>R</sub> = 1200V    T <sub>j</sub> = 125°C		0.5	4	mA
C <sub>T</sub>	Junction Capacitance	V <sub>R</sub> = 200V    T <sub>j</sub> = 25°C		18		pF
<b>DYNAMIC ELECTRICAL CHARACTERISTIC</b>						
Q <sub>rr</sub>	Reverse Recovery Charge	V <sub>R</sub> = 600V    I <sub>F</sub> = 20A d <sub>i</sub> / d <sub>t</sub> = 1000A/μs    T <sub>J</sub> = 25°C		0.63		μC
I <sub>rr</sub>	Reverse Recovery Current			28		A
t <sub>rr</sub>	Reverse Recovery Time			45		nsec
Q <sub>rr</sub>	Reverse Recovery Charge	V <sub>R</sub> = 600V    I <sub>F</sub> = 20A d <sub>i</sub> / d <sub>t</sub> = 1000A/μs    T <sub>J</sub> = 125°C		0.91		μC
I <sub>rr</sub>	Reverse Recovery Current			34		A
t <sub>rr</sub>	Reverse Recovery Time			54		nsec
t <sub>rr</sub>	Reverse Recovery Time	V <sub>R</sub> = 50V    I <sub>F</sub> = 1A d <sub>i</sub> / d <sub>t</sub> = 100A/μs    T <sub>J</sub> = 25°C		40		nsec
<b>THERMAL AND MECHANICAL CHARACTERISTICS</b>						
R <sub>θjc</sub>	Junction to Case Thermal Resistance			1.4		°C/W
T <sub>L</sub>	Lead Temperature			300		°C
L <sub>S</sub>	Stray Inductance		10			nH
Torque	Mounting Torque			1.1		N.m

### TO-247 Package Outline



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