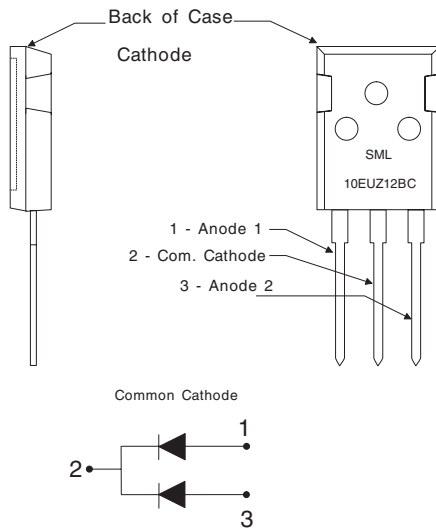


Enhanced Ultrafast Recovery Diode 1200 Volt, 2 x 10 Amp



See Package outline for mechanical data and more details

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

TO247 PACKAGE

Key Parameters

V_R	(max)	1200V
V_F	(typ)	3.2V
I_F	(max)	2 X 10A
t_{rr}	(max)	35nS

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

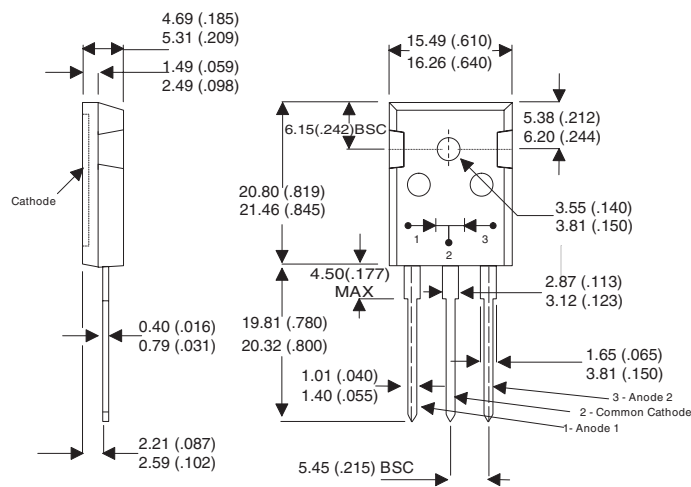
V_{RRM}	Peak Repetitive Reverse Voltage	1200V
V_R	DC Reverse Blocking Voltage	1200V
I_{FAV}	Average Forward Current @ T _C = 85°C	10A
$I_{FSM(surge)}$	Repetitive Forward Current	25A
$I_{FS(surge)}$	Non-Repetitive Forward Current(10msec pulse)	100A
P_D	Power Dissipation @ T _C = 85°C	35W
W_{AVL}	Avalanche Energy(L=40mH)	10mJ
T_J, T_{STG}	Operating & Storage Junction Temperature	- 55 to 150°C

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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
STATIC ELECTRICAL CHARACTERISTIC					
V_F Forward Voltage Drop	$I_F = 10A$ $T_j = 25^{\circ}C$		3.2	3.5	V
	$I_F = 10A$ $T_j = 125^{\circ}C$			3.7	
	$I_F = 5A$ $T_j = 25^{\circ}C$		2.5		
I_R Leakage Current	$V_R = 1200V$ $T_j = 25^{\circ}C$		0.5	500	μA
	$V_R = 1200V$ $T_j = 125^{\circ}C$		0.3	4	mA
C_T Junction Capacitance	$V_R = 200V$ $T_j = 25^{\circ}C$		9		pF
DYNAMIC ELECTRICAL CHARACTERISTIC					
Q_{rr} Reverse Recovery Charge	$V_R = 600V$ $I_F = 10A$ $d_i / d_t = 1000A/\mu s$ $T_J = 25^{\circ}C$		0.5		μC
I_{rr} Reverse Recovery Current			22		A
t_{rr} Reverse Recovery Time			45		nsec
Q_{rr} Reverse Recovery Charge	$V_R = 600V$ $I_F = 10A$ $d_i / d_t = 1000A/\mu s$ $T_J = 125^{\circ}C$		0.71		μC
I_{rr} Reverse Recovery Current			26		A
t_{rr} Reverse Recovery Time			54		nsec
t_{rr} Reverse Recovery Time	$V_R = 50V$ $I_F = 1A$ $d_i / d_t = 100A/\mu s$ $T_J = 25^{\circ}C$		35		nsec
THERMAL AND MECHANICAL CHARACTERISTICS					
$R_{\theta jc}$ Junction to Case Thermal Resistance				2.2	$^{\circ}C/W$
TL Lead Temperature				300	$^{\circ}C$
LS Stray Inductance			10		nH

TO-247 Package Outline



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