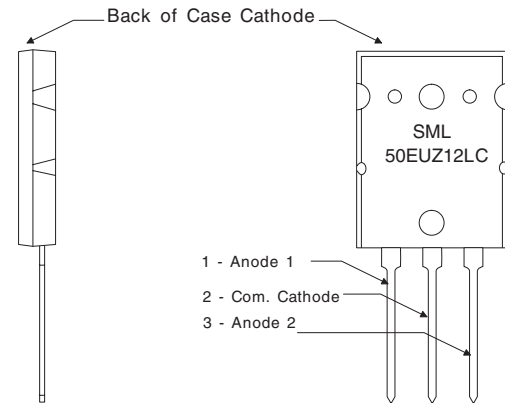
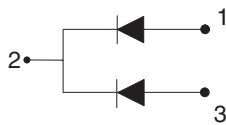


Enhanced Ultrafast Recovery Diode 300 Volt, 2 x 50Amp



See Package outline for mechanical data and more details



TO 264 Package

Key Parameters

V_R	(max)	300V
V_F	(typ)	1.7V
I_F	(max)	2 x 50A
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)

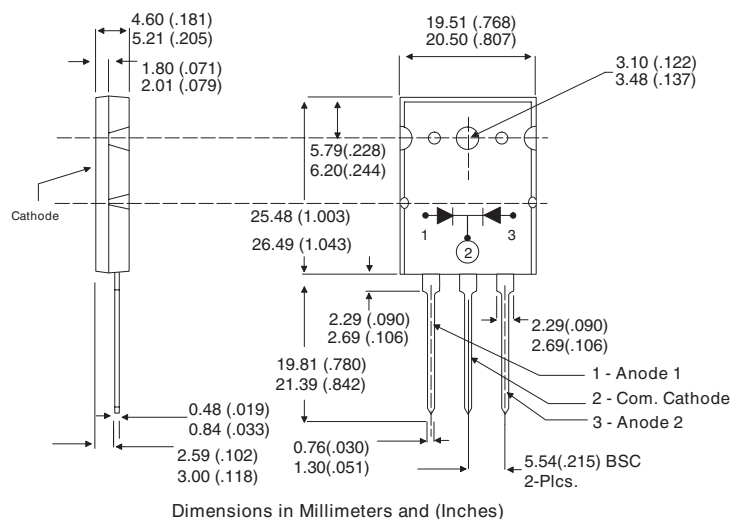
V_{RRM}	Peak Repetitive Reverse Voltage	300V
V_R	DC Reverse Blocking Voltage	300V
I_{FAV}	Average Forward Current @ $T_C = 85^\circ C$	50A
$I_{FSM(surge)}$	Repetitive Forward Current	125A
$I_{FS(surge)}$	Non-Repetitive Forward Current	500A
P_D	Power Dissipation @ $T_C = 85^\circ C$	90W
W_{AVL}	Avalanche Energy	30mJ
T_J, T_{STG}	Operating & Storage Junction Temperature	-55 to $150^\circ C$

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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	$I_F = 50A$ $T_j = 25^{\circ}C$		1.7	2.25	V
	$I_F = 50A$ $T_j = 125^{\circ}C$		1.8		
	$I_F = 25A$ $T_j = 25^{\circ}C$		1.4		
I_R Leakage Current	$V_R = 300V$ $T_j = 25^{\circ}C$		0.75	300	μA
	$V_R = 300V$ $T_j = 125^{\circ}C$		0.5	3	mA
C_T Junction Capacitance	$V_R = 200V$ $T_j = 25^{\circ}C$		74		pF
DYNAMIC ELECTRICAL CHARACTERISTIC					
Q_{rr} Reverse Recovery Charge	$V_R = 200V$ $I_F = 50A$ $d_i / d_t = 600A/\mu s$ $T_J = 25^{\circ}C$		0.44		μC
I_{rr} Reverse Recovery Current			16		A
t_{rr} Reverse Recovery Time			55		nsec
Q_{rr} Reverse Recovery Charge	$V_R = 200V$ $I_F = 50A$ $d_i / d_t = 600A/\mu s$ $T_J = 125^{\circ}C$		0.71		μC
I_{rr} Reverse Recovery Current			22		A
t_{rr} Reverse Recovery Time			66		nsec
t_{rr} Reverse Recovery Time	$V_R = 50V$ $I_F = 1A$ $d_i / d_t = 100A/\mu s$ $T_J = 25^{\circ}C$		40		nsec
THERMAL AND MECHANICAL CHARACTERISTICS					
$R_{\theta jc}$ Junction to Case Thermal Resistance				0.6	$^{\circ}C/W$
T_L Lead Temperature				300	$^{\circ}C$
L_S Stray Inductance			10		nH
Torque Mounting Torque				1.1	N.m

TO-264 Package Outline



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