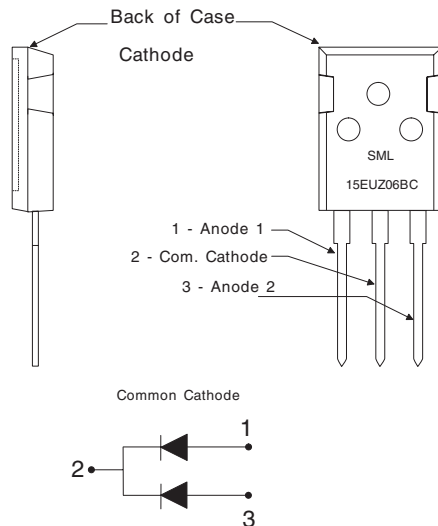


## Enhanced Ultrafast Recovery Diode 600 Volt, 2 x 15 Amp



See Package outline for mechanical data and more details

### TO247 Package

#### Key Parameters

$V_R$	(max)	600V
$V_F$	(typ)	2.3V
$I_F$	(max)	2 x 15A
$t_{rr}$	(max)	30nS

### 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)

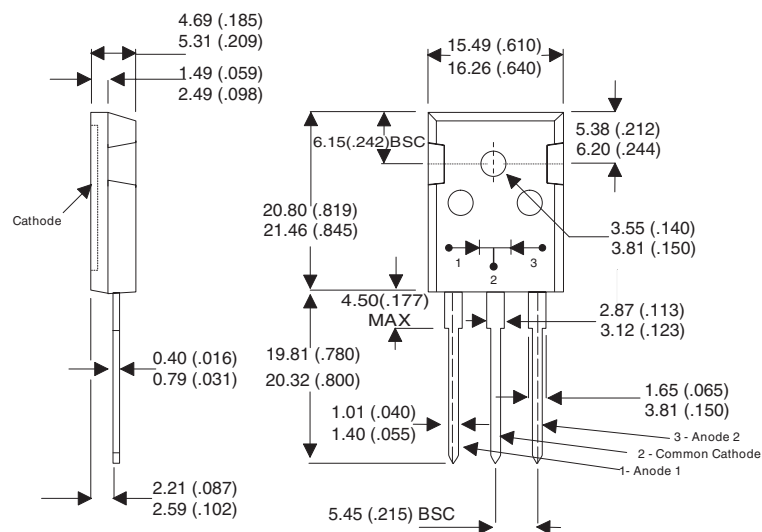
$V_{RRM}$	Peak Repetitive Reverse Voltage	600V
$V_R$	DC Reverse Blocking Voltage	600V
$I_{FAV}$	Average Forward Current @ $T_C = 85^\circ C$	15A
$I_{FSM(surge)}$	Repetitive Forward Current	40A
$I_{FS(surge)}$	Non-Repetitive Forward Current(10msec pulse)	150A
$P_D$	Power Dissipation @ $T_C = 85^\circ C$	40W
$W_{AVL}$	Avalanche Energy(L=40mH)	10mJ
$T_J, T_{STG}$	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
<b>STATIC ELECTRICAL CHARACTERISTIC</b>					
$V_F$ Forward Voltage Drop	$I_F = 15A$ $T_j = 25^{\circ}C$		2.3	2.5	V
	$I_F = 15A$ $T_j = 125^{\circ}C$		2.45		
	$I_F = 5A$ $T_j = 25^{\circ}C$		1.6		
$I_R$ Leakage Current	$V_R = 600V$ $T_j = 25^{\circ}C$		0.4	200	$\mu A$
	$V_R = 600V$ $T_j = 125^{\circ}C$		0.2	2	mA
$C_T$ Junction Capacitance	$V_R = 200V$ $T_j = 25^{\circ}C$		11		pF
<b>DYNAMIC ELECTRICAL CHARACTERISTIC</b>					
$Q_{rr}$ Reverse Recovery Charge	$V_R = 300V$ $I_F = 15A$ $d_i / d_t = 800A/\mu s$ $T_J = 25^{\circ}C$		0.34		$\mu C$
$I_{rr}$ Reverse Recovery Current			17		A
$t_{rr}$ Reverse Recovery Time			40		nsec
$Q_{rr}$ Reverse Recovery Charge	$V_R = 300V$ $I_F = 15A$ $d_i / d_t = 800A/\mu s$ $T_J = 125^{\circ}C$		0.49		$\mu C$
$I_{rr}$ Reverse Recovery Current			20		A
$t_{rr}$ Reverse Recovery Time			48		nsec
$t_{rr}$ Reverse Recovery Time	$V_R = 50V$ $I_F = 1A$ $d_i / d_t = 100A/\mu s$ $T_J = 25^{\circ}C$		30		nsec
<b>THERMAL AND MECHANICAL CHARACTERISTICS</b>					
$R_{\theta jc}$ Junction to Case Thermal Resistance				2.2	$^{\circ}C/W$
TL Lead Temperature				300	$^{\circ}C$
LS Stray Inductance			10		nH
Torque Mounting Torque				1.1	N.m

### TO-247 Package Outline



Dimensions in Millimeters and (Inches)

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