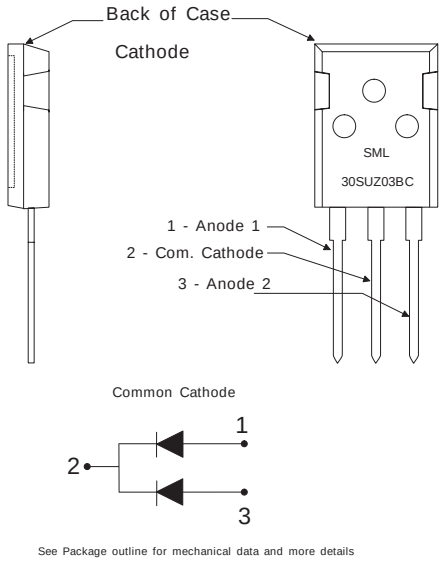
SML30SUZ03BC

Ultrafast Recovery Diode
300 Volt, 2 x 30Amp



See Package outline for mechanical data and more details

TO-247 PACKAGE

Key Parameters

V_R	(max)	300V
V_F	(typ)	1.5V
I_F	(max)	2 x 30A
t_{rr}	(max)	40nS

TECHNOLOGY

The planar passivated and standard 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 Upplies SMPS
- Inverse and Clamping Diode
- Snubber Diode
- Fast Switching Rectification

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°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°C	30A
$I_{FSM(surge)}$	Repetitive Forward Current	75A
$I_{FS(surge)}$	Non-Repetitive Forward Current(10msec pulse)	300A
P_D	Power Dissipation @T_C = 85°C	50W
W_{AVL}	Avalanche Energy(L=40mH)	20mJ
T_J ,T_{STG}	Operating & Storage Junction Temperature	-55 to 150°C

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

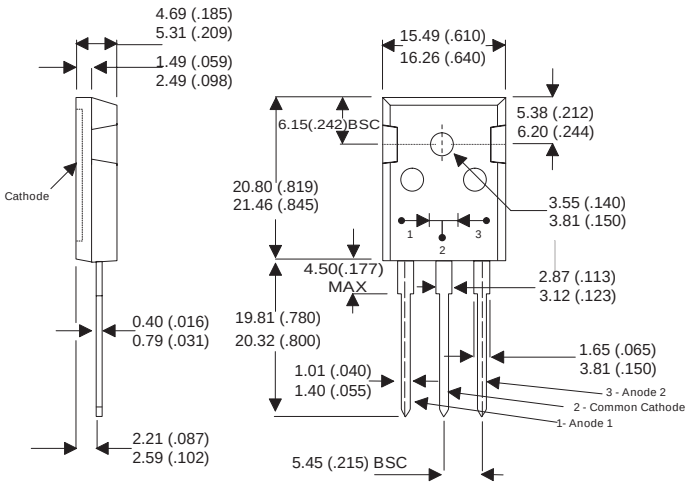
Document Number 2461
Issue 1

SML30SUZ03BC

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
STATIC ELECTRICAL CHARACTERISTIC							
V_F	Forward Voltage Drop	I_F = 30A	T_j = 25°C		1.5	2	V
		I_F = 30A	T_j = 125°C		1.6		
		I_F = 15A	T_j = 25°C		1.25		
I_R	Leakage Current	V_R = 300V	T_j = 25°C		0.5	200	µA
		V_R = 300V	T_j = 125°C		0.2	2	mA
C_T	Junction Capacitance	V_R = 200V	T_j = 25°C		38		pF
DYNAMIC ELECTRICAL CHARACTERISTIC							
Q_{rr}	Reverse Recovery Charge	V_R = 200V	I_F = 30A		0.55		µC
I_{rr}	Reverse Recovery Current	d_i / d_t = 600A/µs	T_J =25°C		17		A
t_{rr}	Reverse Recovery Time				65		nsec
Q_{rr}	Reverse Recovery Charge	V_R = 200V	I_F = 30A		0.8		µC
I_{rr}	Reverse Recovery Current	d_i / d_t = 600A/µs	T_J = 125°C		20		A
t_{rr}	Reverse Recovery Time				78		nsec
t_{rr}	Reverse Recovery Time	V_R = 50V	I_F = 1A		40		nsec
		d_i / d_t = 100A/µs	T_J = 25°C				
THERMAL AND MECHANICAL CHARACTERISTICS							
$R_{\theta jc}$	Junction to Case Thermal Resistance					1.4	°C/W
T_L	Lead Temperature					300	°C
L_S	Stray Inductance				10		nH
Torque	Mounting Torque					1.1	N.m

TO-247 Package Outline



Dimensions in Millimeters and (Inches)

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

Document Number 2461
Issue 1