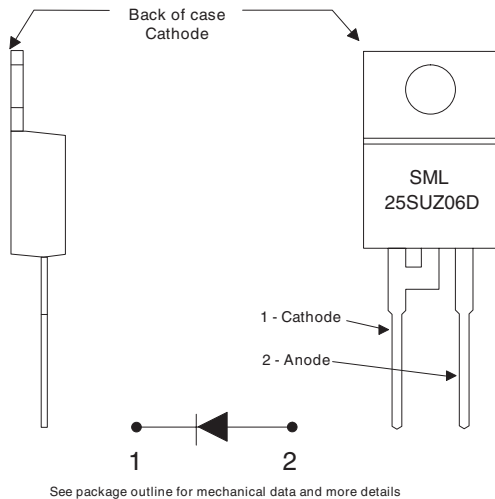


Ultrafast Recovery Diode 600 Volt, 25 Amp



TO220 Package

Key Parameters

V_R	(max)	600V
V_F	(typ)	1.8V
I_F	(max)	25A
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 Supplies SMPS
- Inverse and Clamping Diode
- Snubber Diode
- Fast Switching Rectification

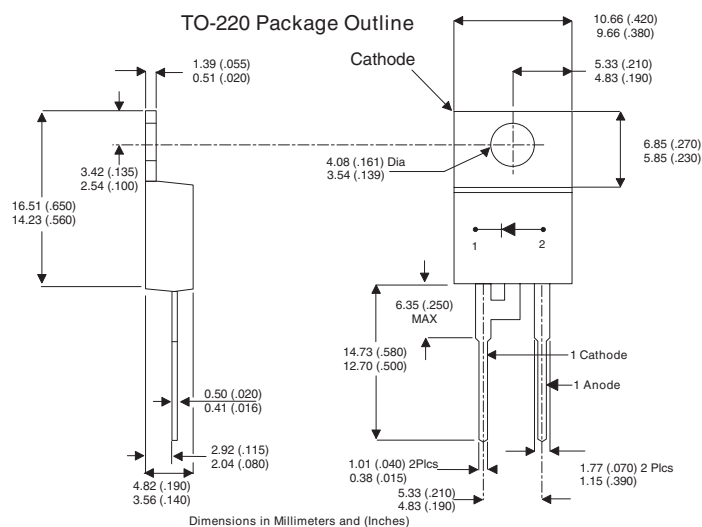
ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^\circ C$ unless otherwise stated)

V_{RRM}	Peak Repetitive Reverse Voltage	600V
V_R	DC Reverse Blocking Voltage	600V
I_{FAV}	Average Forward Current @ $T_C = 85^\circ C$	25A
$I_{FSM(surge)}$	Repetitive Forward Current	70A
$I_{FS(surge)}$	Non-Repetitive Forward Current	250A
P_D	Power Dissipation @ $T_C = 85^\circ C$	50W
W_{AVL}	Avalanche Energy	20mJ
T_J, T_{STG}	Operating & Storage Junction Temperature	-55 to $150^\circ C$

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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 = 25A T _j = 25°C		1.8	2.25	V
		I _F = 25A T _j = 125°C		1.9		
		I _F = 15A T _j = 25°C		1.6		
I _R	Leakage Current	V _R = 600V T _j = 25°C		0.6	200	μA
		V _R = 600V T _j = 125°C		0.4	2	mA
C _T	Junction Capacitance	V _R = 200V T _j = 25°C		21		pF
DYNAMIC ELECTRICAL CHARACTERISTIC						
Q _{rr}	Reverse Recovery Charge	V _R = 300V I _F = 25A d _i / d _t = 800A/μs T _J = 25°C		0.66		μC
I _{rr}	Reverse Recovery Current			24		A
t _{rr}	Reverse Recovery Time			56		nsec
Q _{rr}	Reverse Recovery Charge	V _R = 300V I _F = 25A d _i / d _t = 800A/μs T _J = 125°C		0.95		μC
I _{rr}	Reverse Recovery Current			28		A
t _{rr}	Reverse Recovery Time			68		nsec
t _{rr}	Reverse Recovery Time	V _R = 50V I _F = 1A d _i / d _t = 100A/μs T _J = 25°C		40		nsec
THERMAL AND MECHANICAL CHARACTERISTICS						
R _{θjc}	Junction to Case Thermal Resistance			1.4		°C/W
T _L	Lead Temperature			300		°C
L _S	Stray Inductance		10			nH
Torque	Mounting Torque			0.7		N.m



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