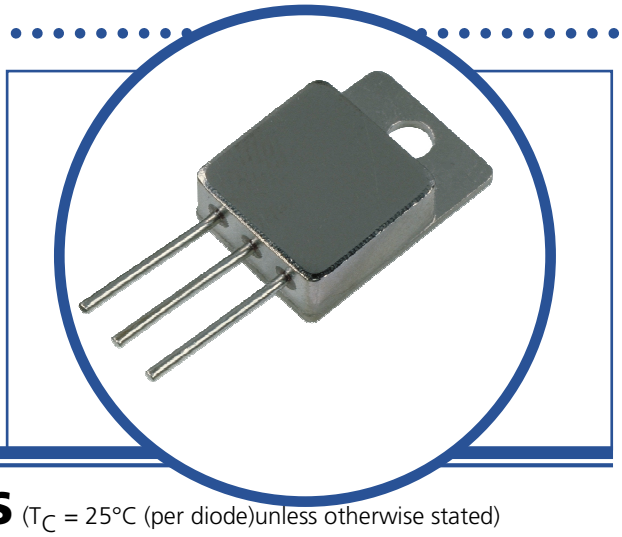
DUAL COMMON CATHODE SILICON CARBIDE SCHOTTKY DIODE

TT electronics
Semelab Limited

SML20SIC06M3M



- $V_{R(max)}$ = 600V
- $I_{F(avg)}$ = 20A
- $V_{F(typ)}$ = 1.8V
- Metal Hermetic TO-254 Package
- Dual Common Cathode Configuration
- High Reliability Screening Options Available
- Effective Zero Forward and Reverse Recovery

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C (per diode)unless otherwise stated)

V_{RRM}	Peak Repetitive Reverse Voltage	600V
V_{RSM}	Surge Peak Reverse Voltage	600V
$I_{F(AVG)}$	Average Forward Current	20A
I_{FRM}	Repetitive Peak Forward Current (1) (per diode)	50A
I_{FMAX}	Non-Repetitive Peak Forward Current	250A
P_D	Total Power Dissipation (per diode) at T_C = 25°C	111W
	Derate Above T_C = 25°C	0.56W/°C
T_J	Junction Temperature Range	-55 to +225°C
T_{stg}	Storage Temperature Range	-55 to +225°C

THERMAL PROPERTIES(per diode)

Symbols	Parameters	Max.	Unit
$R_{\theta JC}$	Thermal Resistance, Junction To Case (per Diode)	1.8	°C/W

(1) T_{case} = 25°C, Tp = 8.3mS Half sine wave D=0.3

Beryllium oxide (BeO) HAZARDOUS MATERIAL WARNING

Package containing beryllium oxide must not be ground, machined, or have other processes performed on them which may produce beryllium or beryllium dust.

THESE DEVICES MUST NEVER BE THROWN AWAY WITH GENERAL INDUSTRIAL OR DOMESTIC WASTE.

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated Per Side)

Symbol	Parameters	Test Conditions	Min.	Typ.	Max.	Unit
V_F (1)	Diode Forward Voltage	I_F = 12A		1.5	2	V
		I_F = 20A		1.8	2.5	
		I_F = 20A T_J = 175°C		2.4	3.0	
I_R	Leakage Current	V_R = 600V		10	100	µA
		V_R = 600V T_J = 175°C		5	200	

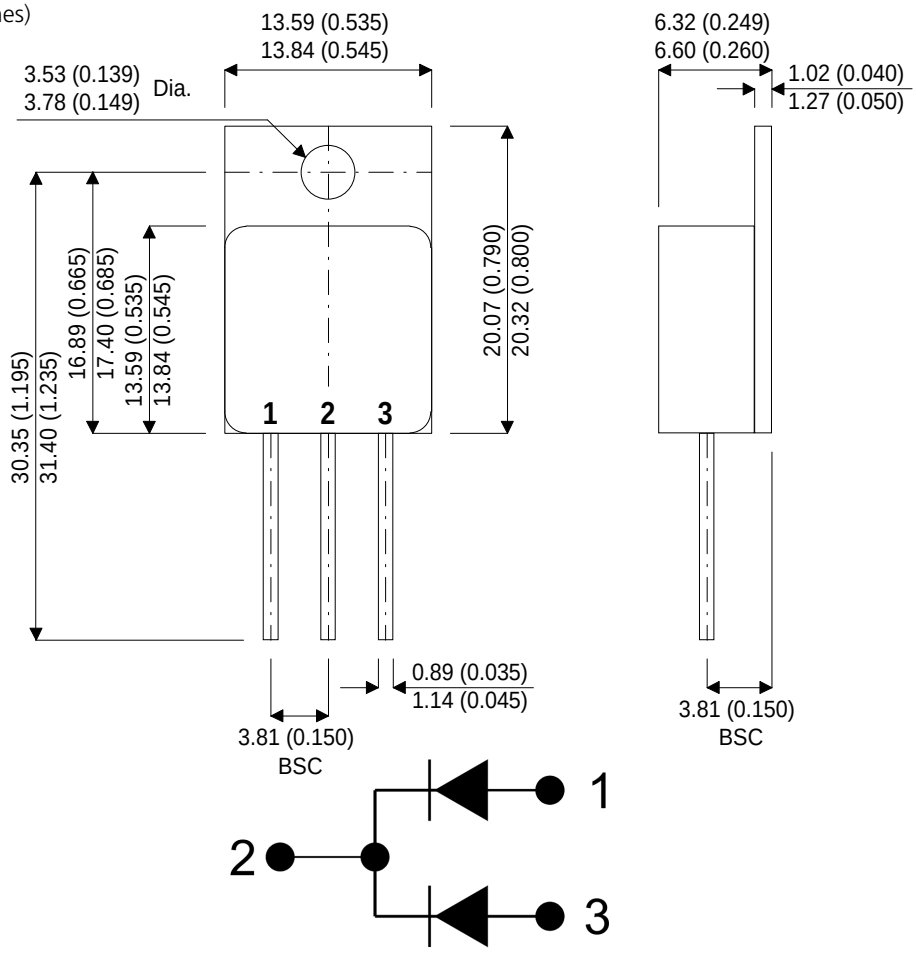
DYNAMIC CHARACTERISTICS (T_C = 25°C unless otherwise stated Per Side)

C	Total Capacitance	V_R = 1.0V f = 1.0MHz		700		pF

Notes
(1) Pulse Width ≤ 300us, δ ≤ 2%

MECHANICAL DATA

Dimensions in mm (inches)



(TO-254AA) METAL PACKAGE

Pad 1 - Anode 1 Pad 2 -Cathode Pad 3 - Anode 2