

Major Ratings and Characteristics

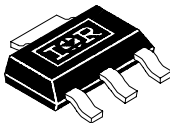
Characteristics	20CJQ100	Units
$I_{F(AV)}$ Rectangular waveform	2.0	A
V_{RRM}	100	V
I_{FSM} @ $t_p = 5 \mu s$ sine	380	A
V_F @ 1.0Apk, $T_J = 125^\circ C$ (Per Leg)	0.67	V
T_J	-55 to 175	$^\circ C$

Description / Features

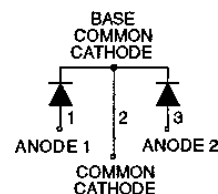
The 20CJQ100 surface-mount Schottky rectifier has been designed for applications requiring very low forward drop and very small foot prints. Typical applications are in portable, switching power supplies, converters, automotive systems, free-wheeling diodes, battery charging and reverse battery protection.

- Small footprints, surface mountable
- Low profile
- Very low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long- term reliability
- Common Cathode

CASE STYLE



CIRCUIT



Voltage Ratings

Part number		20CJQ0100
V _R	Max. DC Reverse Voltage (V)	100
V _{RWM}	Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

Parameters	20CJQ100	Units	Conditions
I _{F(AV)} Max. Average Forward Current See Fig. 5	2.0	A	50% duty cycle @ T _C = 152°C, rectangular waveform
	4.0		50% duty cycle @ T _C = 132°C, rectangular waveform
I _{FSM} Max. Peak One Cycle Non - Repetitive Surge Current (Per Leg) See Fig. 7	380	A	Following any rated load condition and rated V _{RWM}
	22		
E _{AS} Max. Average Forward Current (Per Leg)	13	mJ	T _J = 25°C, I _{AS} = 1.0A, L = 26mH
I _{AR} Repetitive Avalanche Current (Per Leg)	1.0	A	Current decaying linearly to zero in 1µsec Frequency limited by T _J max. V _A = 1.5 X V _R typical

Electrical Specifications

Parameters	20CJQ100	Units	Conditions
V _{FM} Max. Forward Voltage Drop (Per Leg) See Fig. 1 ①	0.79	V	@ 1.0A
	0.89	V	@ 2.0A
	0.67	V	@ 1.0A
	0.76	V	@ 2.0A
I _{RM} Max. Reverse Leakage Current (Per Leg) See Fig. 2 ①	0.1	mA	T _J = 25°C
	1.0	mA	T _J = 125°C
C _T Max. Junction Capacitance (Per Leg)	45	pF	V _R = 5V _{DC} , (test signal range 100KHz to 1MHz) 25°C
L _S Typical Series Inductance (Per Leg)	6.0	nH	Measured lead to lead 5mm from package body
dv/dt Max. Voltage Rate of Change (Rated V _R)	10,000	V/µs	

Thermal-Mechanical Specifications

Parameters	20CJQ100	Units	Conditions
T _J Max. Junction Temperature Range	-55 to 175	°C	
T _{stg} Max. Storage Temperature Range	-55 to 175	°C	
R _{thJA} Max. Thermal Resistance, Junction to Ambient	65	°C/W	DC operation
R _{thJL} Max. Thermal Resistance, Junction to Lead	25	°C/W	DC operation -See Fig. 4
w _t Weight (Typical)	0.13(.0045)	g (oz.)	
Case Style	SOT-223		

① Pulse Width < 300µs, Duty Cycle < 2%

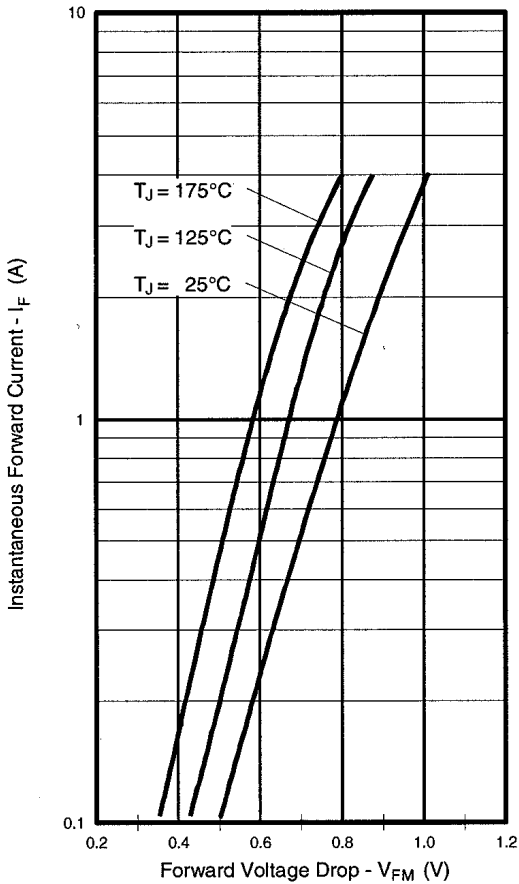


Fig. 1 Max. Forward Voltage Drop Characteristics (Per Leg)

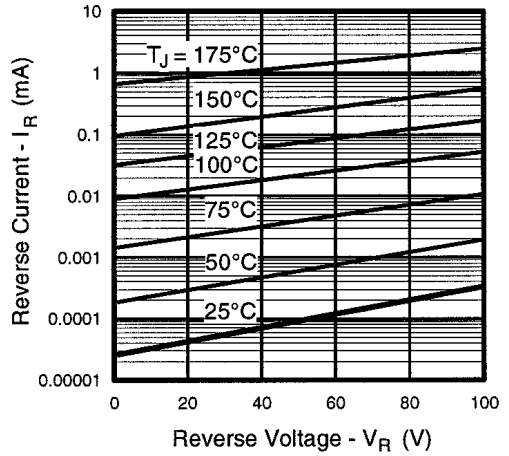


Fig. 2 Typical Values of Reverse Current Vs. Reverse Voltage (Per Leg)

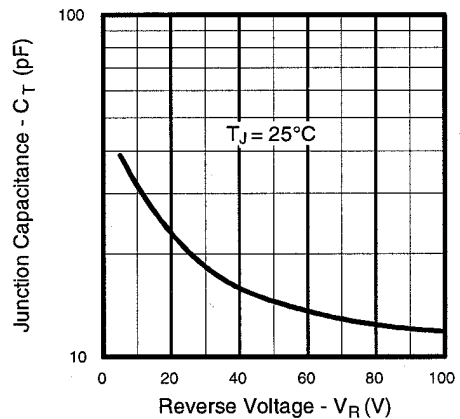


Fig. 3 Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

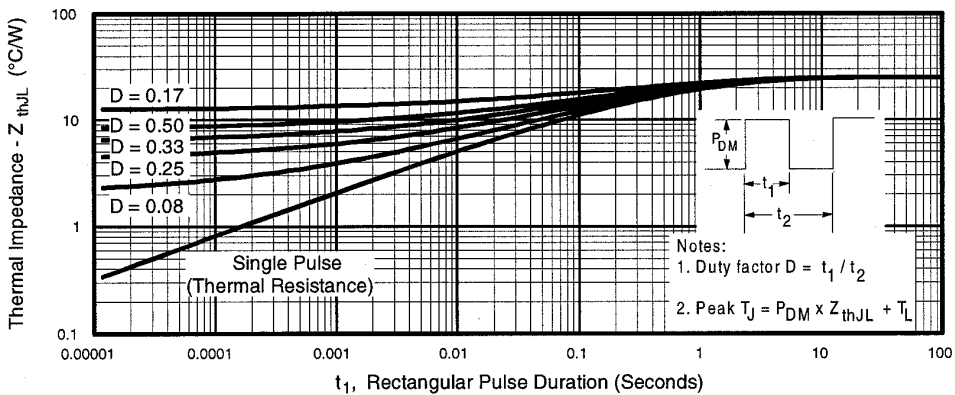


Fig. 4 Max. Thermal Impedance Z_{thJL} Characteristics (Per Leg)

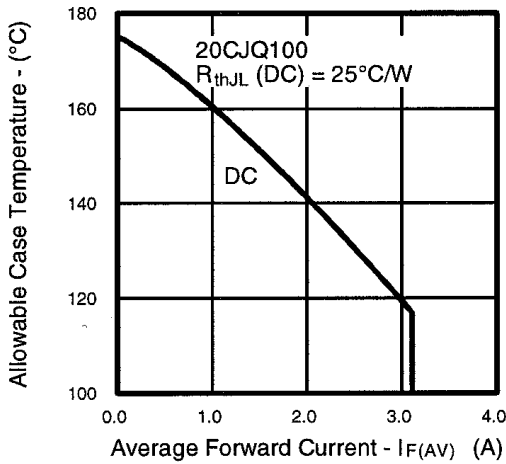


Fig. 5 Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

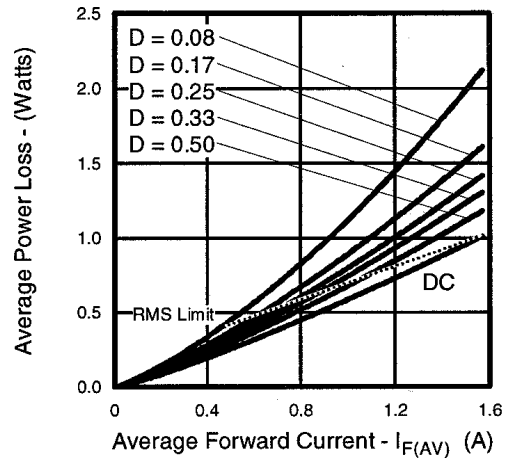


Fig. 6 Forward Power Loss Characteristics (Per Leg)

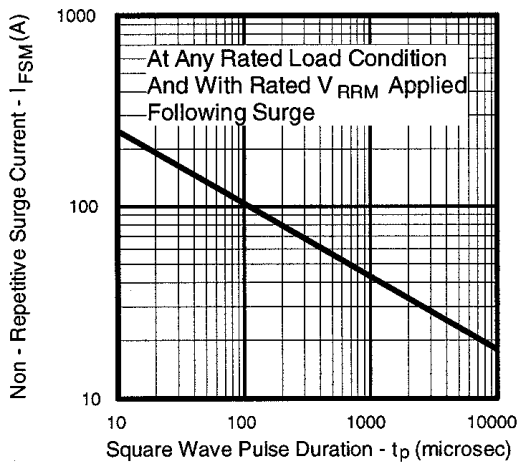


Fig.7 Max. Non-Repetitive Surge Current (Per Leg)

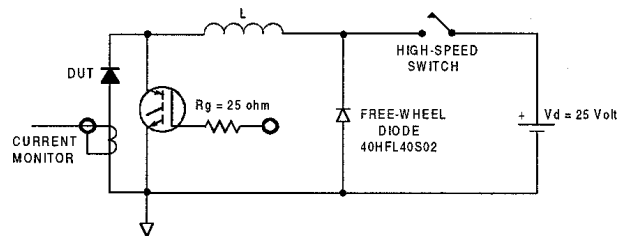
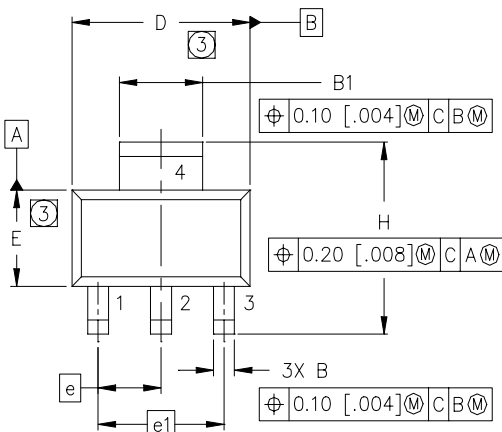
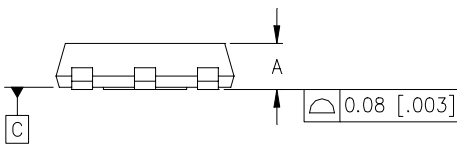


Fig. 8 Unclamped Inductive Test Circuit

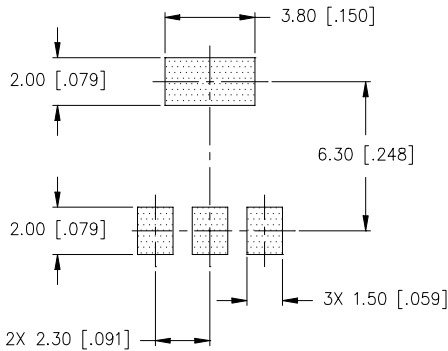
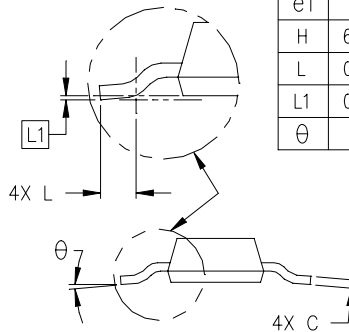
Package Outline
SOT-223 (TO-261AA) Outline



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.55	1.80	.061	.071
B	0.65	0.85	.026	.033
B1	2.95	3.15	.116	.124
C	0.25	0.35	.010	.014
D	6.30	6.70	.248	.264
E	3.30	3.70	.130	.146
e	2.30	BSC	.0905	BSC
e1	4.60	BSC	.181	BSC
H	6.71	7.29	.264	.287
L	0.91	—	.036	—
L1	0.061	BSC	.0024	BSC
θ	—	10°	—	10°



MINIMUM RECOMMENDED FOOTPRINT



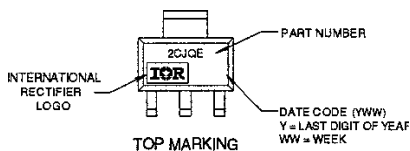
LEAD ASSIGNMENTS

- 1 = ANODE
- 2 = CATHODE
- 3 = ANODE

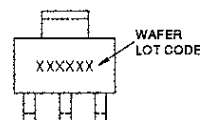
NOTES:

1. DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994.
2. CONTROLLING DIMENSION: INCH.
- ③ DIMENSIONS DO NOT INCLUDE MOLD FLASH.
4. OUTLINE CONFORMS TO JEDEC OUTLINE TO-261AA.
5. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].

Part Marking Information
SOT-223

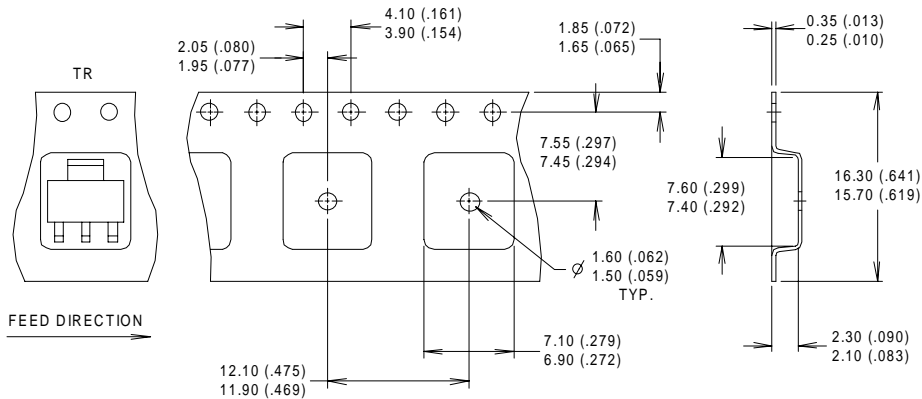


BOTTOM MARKING

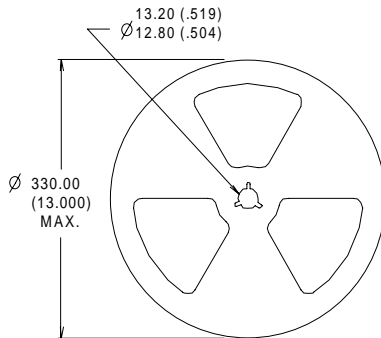


Tape & Reel Information

SOT-223 Outline



- NOTES :
1. CONTROLLING DIMENSION: MILLIMETER.
 2. OUTLINE CONFORMS TO EIA-481 & EIA-541.
 3. EACH $\varnothing 330.00$ (13.00) REEL CONTAINS 2,500 DEVICES.



- NOTES :
1. OUTLINE COMFORMS TO EIA-418-1.
 2. CONTROLLING DIMENSION: MILLIMETER..
 - ③ DIMENSION MEASURED @ HUB.
 - ④ INCLUDES FLANGE DISTORTION @ OUTER EDGE.

