100V Trench MOS Barrier Schottky VF 0.63V@20A, 25℃

Features

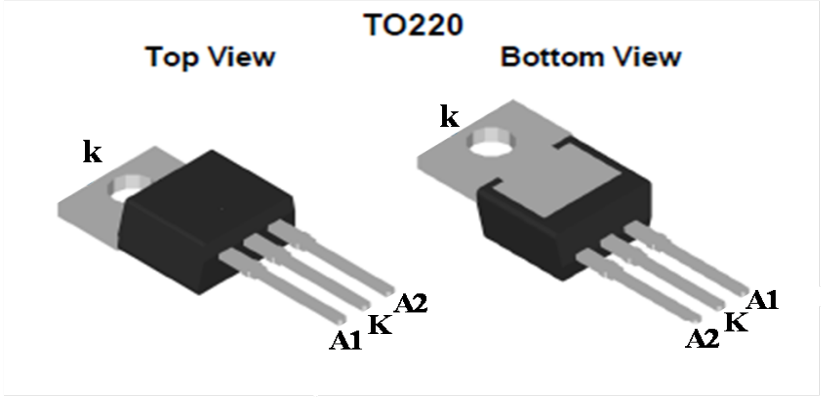
- Trench MOS schottky technology
- Low stored charge Majority Carrier Conduction
- Ultra low forward voltage drop
- Low leakage current
- Low power loss and high efficiency
- High surge capacity
- ESD rating:>20K volts

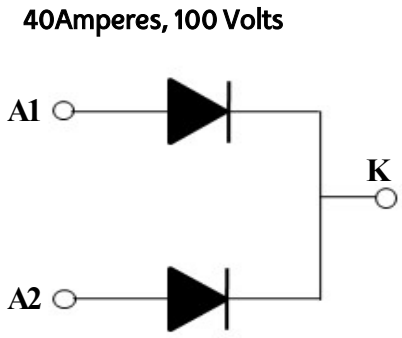
Product Summary

Symbol	Value
I_F(AV)	20A×2
V_{RRM}	100V
$V_{F(per\ diode)}$	0.63V
T_j(max)	150℃

Applications

- Schottky rectifier design for high frequency switched mode power supplies, such as adaptators and on board DC/DC converters.





Package Marking and Ordering Information

Part #	Marking	Package	Packing	Reel Size	Tape Width	Qty
CRRT40L100B	-	TO-220	Tube	N/A	N/A	50pcs

Major Rating and Characteristics(per diode)

Parameter		Symbol	Value	Unit
Repetitive peak reverse voltage		V_{RRM}	100	V
Storage temperature range		T_J	-55 to 150	℃
Maximum average forward current 50 % duty cycle, rectangular waveform	Tc=125℃	I_F(AV)	20	A
Surge non repetitive forward current	8.3 ms sine	I_{FSM}	400	

Thermal Characteristics(at Tj=25℃ unless otherwise noted)

Parameter	Symbol	CRRT40L100B	Unit
Typical thermal resistance	R_{JA}	55.94	°C/W
	R_{JC}	1.34	

Electrical Characteristic (at Tj = 25 °C, unless otherwise note, per diode)

Parameter	Symbol	Value			Unit	Test Condition	
		min.	typ.	max.			
Forward Voltage Drop	V_F(1)	-	0.51	-	V	I_F=10A	T_A=25℃
		-	0.63	0.68		I_F=20A	
		-	0.48	-		I_F=10A	T_A=125℃
		-	0.60	0.65		I_F=20A	
Reverse leakage current	I_R(2)	-	-	100	uA	V_R=100V	T_A=25℃
			-	40	mA		T_A=125℃
Junction capacitance	C_j	-	1321	-	pF	V_R=5V_{DC},25℃(1MHz)	

Notes

(1) Pulse test: pulse width ≤1mS, Duty Cycle≤2%

(2) Pulse test: pulse width ≤1mS, Duty Cycle≤2%

Characteristics Curves(T_A=25℃ unless otherwise noted, per diode)

Fig.1 Typical Forward Voltage Characteristics

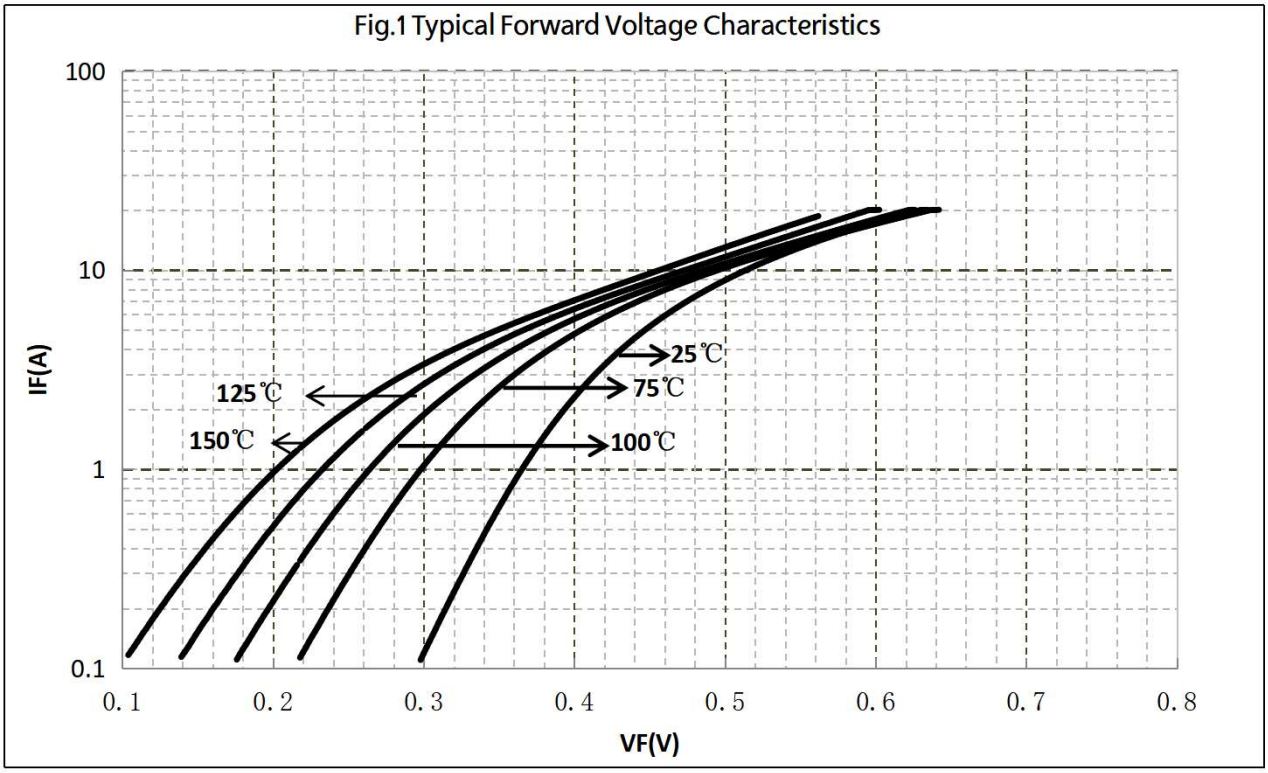
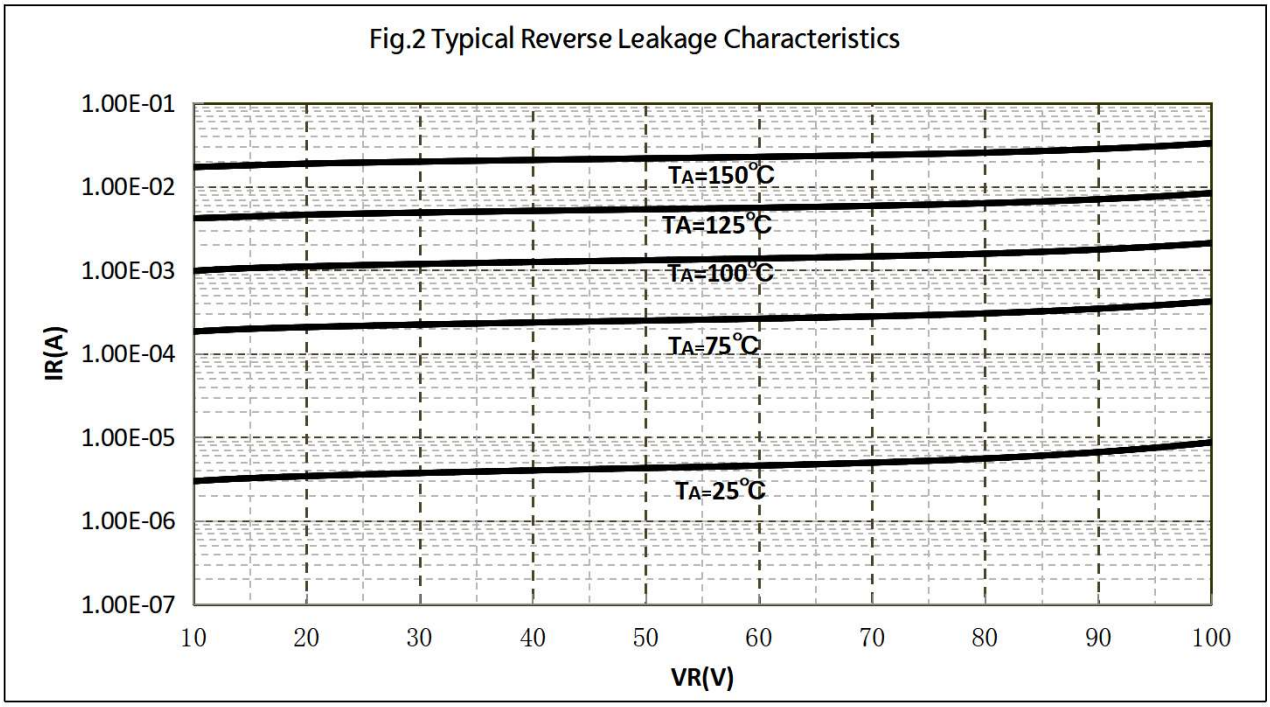
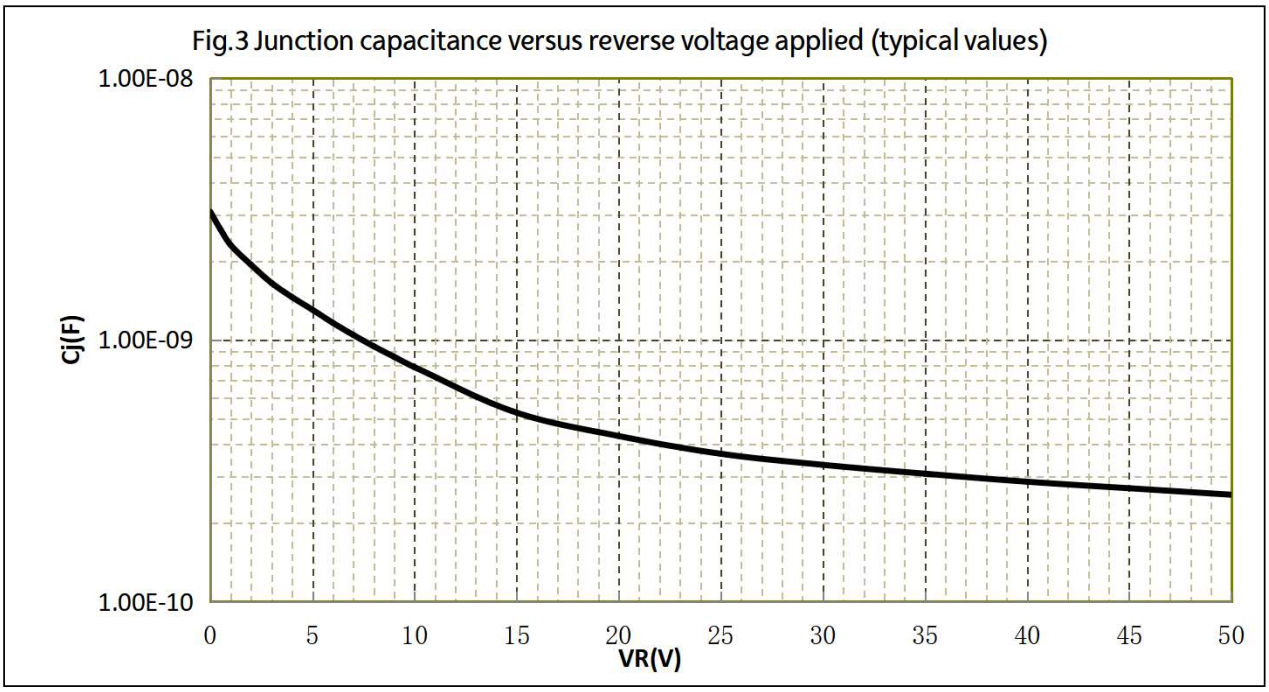
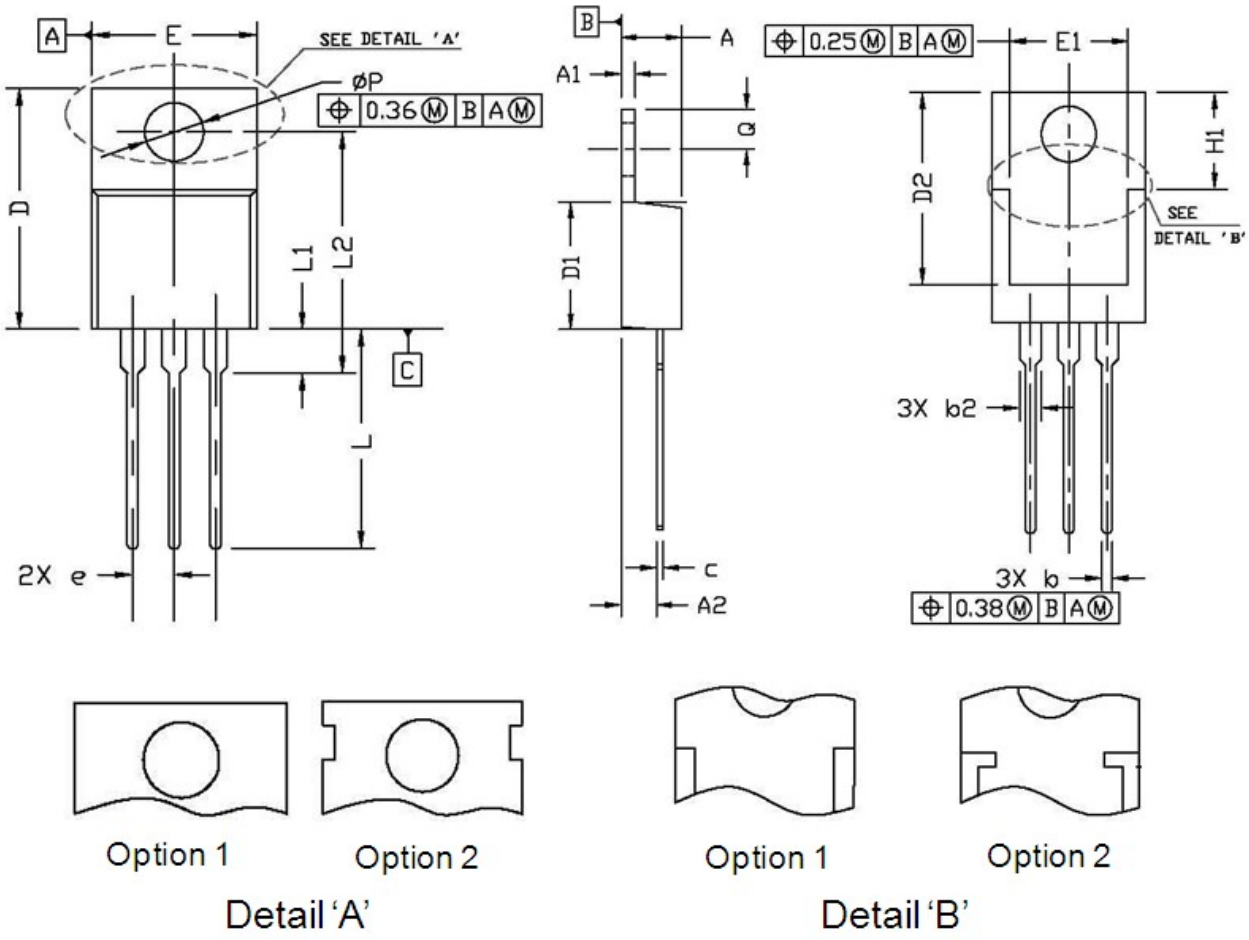


Fig.2 Typical Reverse Leakage Characteristics




Fig.3 Junction capacitance versus reverse voltage applied (typical values)
1.00E-08
1.00E-09
1.00E-10
Cj(F)
0
5
10
15
20
25
30
35
40
45
50
VR(V)

Pack



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.80	0.169	0.189
A1	1.20	1.45	0.047	0.057
A2	2.20	2.90	0.087	0.114
b	0.69	0.95	0.027	0.037
b2	1.00	1.60	0.039	0.063
c	0.33	0.65	0.013	0.026
D	14.70	16.20	0.579	0.638
D1	8.59	9.65	0.338	0.380
D2	11.75	13.60	0.463	0.535
e	2.54 BSC.		0.100 BSC.	
E	9.60	10.60	0.378	0.417
E1	7.00	8.46	0.276	0.333
H1	6.20	7.00	0.244	0.276
L	12.60	14.80	0.496	0.583
L1	2.70	3.80	0.106	0.150
L2	12.13	16.50	0.478	0.650
Q	2.40	3.10	0.094	0.122
P	3.50	3.90	0.138	0.154

Revision History

Revison	Date	Major changes
3.0	2020/11/12	Release of formal version

Disclaimer

Unless otherwise specified in the datasheet, the product is designed and qulified as a standard commercial product and is not intended for use in applications that require extraordinary levels of quality and reliability, such as automotive, aviation/aerospace and life-support devices or systems.

Any and all semicondutor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.

CRM(CQ) reserves the right to improve product design, function and reliability without notice.