



# PCBR(X)40100CT

Trench Schottky Barrier Rectifier

Reverse Voltage 100 Volts Forward Current 40 Amperes

## Features

Ultra Low  $V_F=0.46V$  at  $I_F=3A$  (25°C)

Ultra Low  $V_F=0.82V$  at  $I_F=20A$  (25°C)

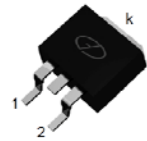
- Low forward voltage drop, low power losses
- High efficiency operation
- Plastic package has underwriters Laboratory Flammability Classification 94V-0



Package: ITO-220-AB  
PCBRF40100CT



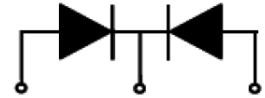
Package: TO-220-AB  
PCBR40100CT



Package: TO-263  
PCBRB40100CT

## Mechanical Data

- Case: Epoxy, Molded
- Weight: 1.9grams(TO220/ITO220), 1.40grams(TO263) (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 50 units per plastic tube or tape reel packing 800/reel(TO263)



1. Anode 2. Cathode 3. Anode

## Maximum Ratings & Electrical Characteristics

( $T_A=25^\circ C$  unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	PCBR(X)40100CT	UNIT
Maximum repetitive peak reverse voltage			$V_{RRM}$	100	V
Working peak reverse voltage			$V_{RWM}$	100	V
Maximum DC blocking voltage			$V_{DC}$	100	V
Maximum average forward rectified current at $T_c=105^\circ C$ total device per diode			$I_F(AV)$	40 20	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode			$I_{FSM}$	200	A
Peak repetitive reverse current per leg at $t_p=2.0\mu s$ , 1KHz			$I_{RRM}$	2.0	A
Voltage rate of change (rated $V_R$ )			$DV/dt$	10000	V/ $\mu s$
Operating junction temperature range			$T_J$	-55 to +150	$^\circ C$
Storage temperature range			$T_{STG}$	-55 to +150	$^\circ C$
Isolation voltage (ITO-220-AB only) from terminal to heatsink $t = 1$ sec			$V_{AC}$	1500	V
Maximum instantaneous forward voltage per leg	$I_F=20A$ $I_F=20A$	$T_C=25^\circ C$ $T_C=125^\circ C$	$V_F$	0.90(0.82TYP) 0.80	V
Maximum reverse current per leg at working peak Reverse voltage		$T_J=25^\circ C$ $T_J=100^\circ C$	$I_R$	200 15	$\mu A$ mA

### Thermal Characteristics $T_A=25^\circ C$ unless otherwise noted

Symbol	Parameter	TYP (TO-220-AB/TO263)	TYP (ITO-220-AB)	Unit
$R_{\theta JC}$	Thermal Resistance, Junction to Case per Leg	2.0	4.0	$^\circ C / W$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient per Leg	62.5	62.5	$^\circ C / W$

Note: Pulse test: 300 $\mu s$  pulse width, duty cycle=2%



## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

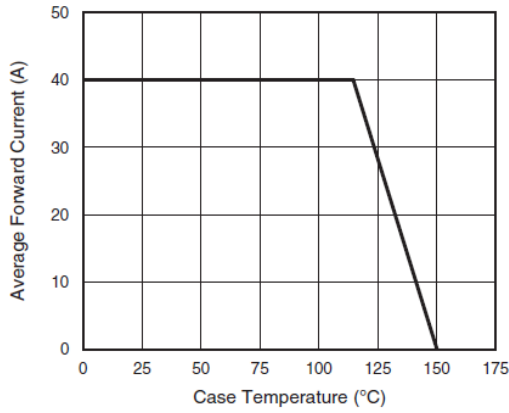


Fig. 1 - Forward Current Derating Curve

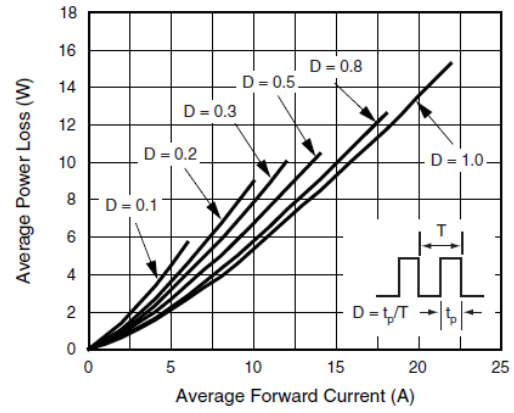


Fig. 2 - Forward Power Loss Characteristics Per Diode

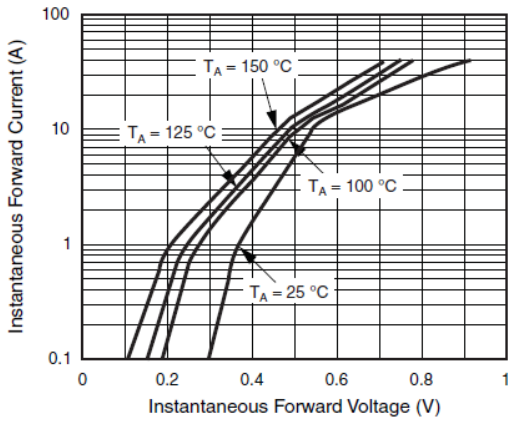


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

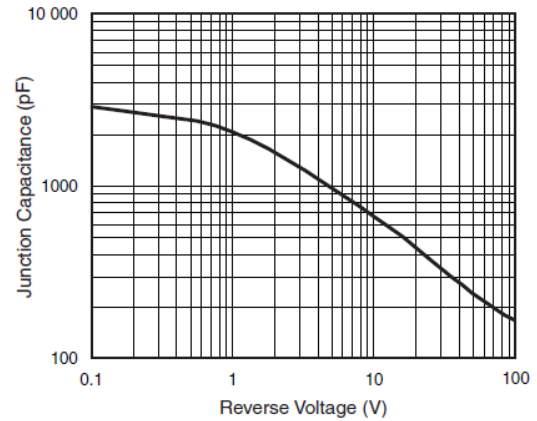


Fig. 5 - Typical Junction Capacitance Per Diode

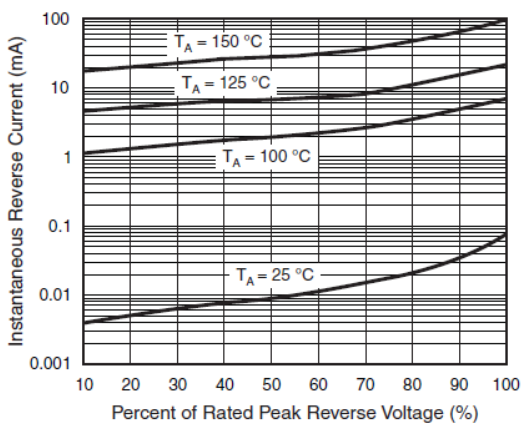


Fig. 4 - Typical Reverse Characteristics Per Diode

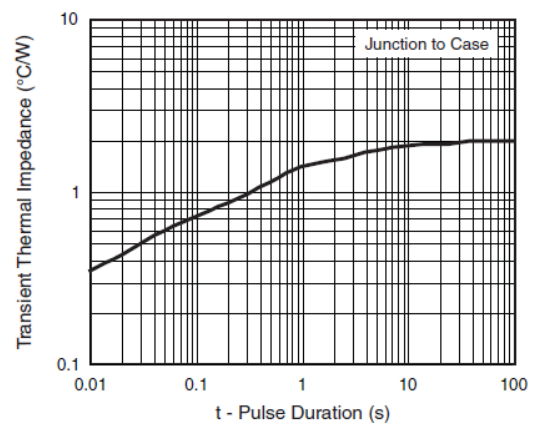
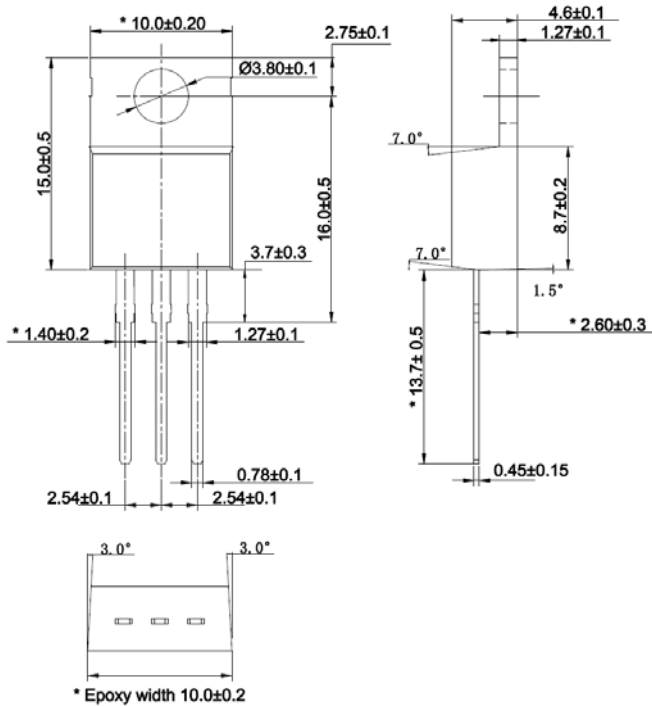


Fig. 6 - Typical Transient Thermal Impedance Per Diode

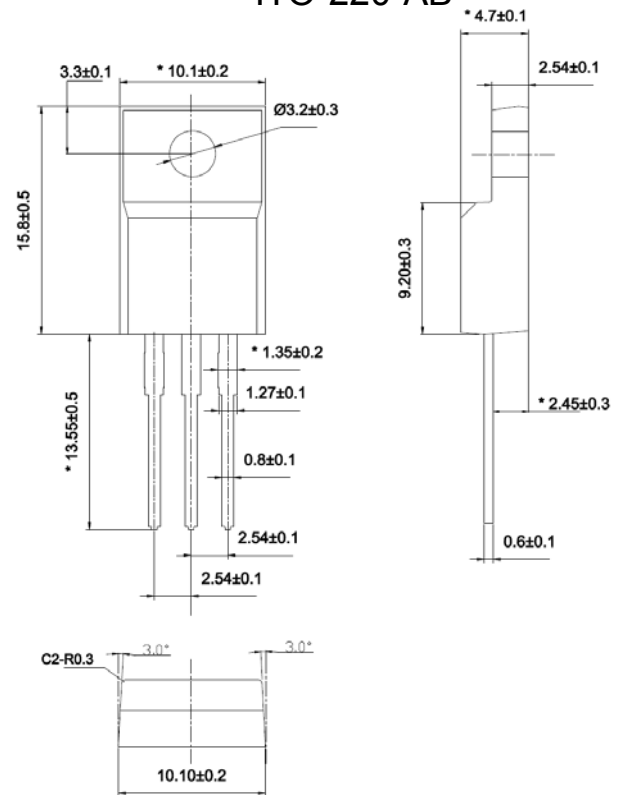
## Package Outline Dimensions

Unit: millimeters

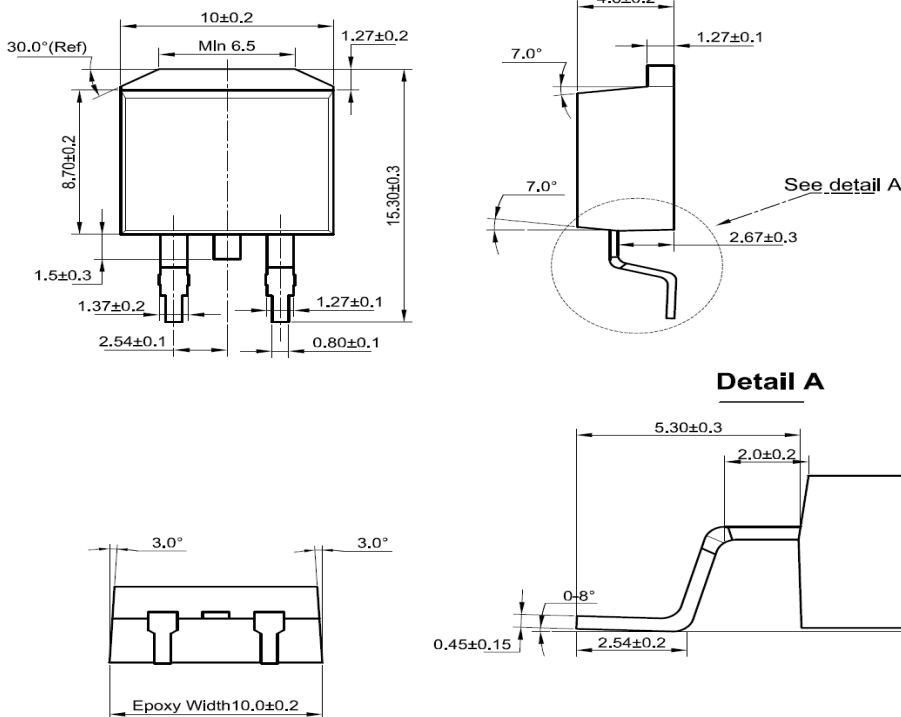
### TO-220-AB



### ITO-220-AB



### TO-263





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Trench Schottky Barrier Rectifier  
Reverse Voltage 100 Volts Forward Current 40 Amperes

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