PFC Device Corporation

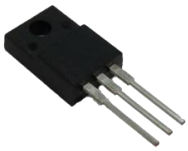
PTR40100CT
PTR40100CTF
PTR40100CTI
PTR40100CTB

40A 100V HPTR® Schottky Rectifier

Major ratings and characteristics

Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20 × 2	A
V_{RRM}	100	V
V_F@ 20A , Tj=125 °C	0.67	V, typ.
T_J Operating Junction Temperature	-40 to +150	°C

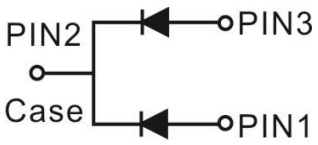
PTR40100CT **PTR40100CTF**



TO-220AB **ITO-220AB**

PTR40100CTI **PTR40100CTB**

TO-262 **TO-263**



Features

- Reliable High Temperature Operation
- Softest, fast switching capability
- 150°C Operating Junction Temperature
- Lead Free Finish, RoHS Compliant

Typical Applications

Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications

1. Characteristics

Maximum Ratings Characteristics (T_A = 25℃ unless otherwise specified)

Parameter	Symbol	Values	Units
DC Blocking Voltage	V_{RM}	100	Volts
Working Peak Reverse Voltage	V_{RWM}		
Peak Repetitive Reverse Voltage	V_{RRM}		
Average Rectified Forward Current Per device (Rated VR-20Khz Square Wave) - 50% duty cycle	I_o	40	Amps
Peak Forward Surge Current - 1/2 60hz	I_{FSM}	200	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I_{RRM}	1	Amps
Typical Thermal Resistance (per leg) Package = TO-220AB Package =ITO-220AB Package =TO-262 Package =TO-263	$R\theta_{Jc}$	 2 4 2.5 3	°C / W
Isolation voltage (ITO-220 only)	V_{AC}	1500	V
Maximum Rate of Voltage Change (at Rated V_R)	dv/dt	10000	V/uS
Operating Junction Temperature	T_J	- 40 to +150	°C
Storage Junction Temperature	T_{STG}	- 40 to +150	

Electrical Characteristics - (per leg) (T_A = 25℃ unless otherwise specified)

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Instantaneous Forward Voltage	IF = 5 A	T_J = 25 °C	V_F*	0.49	-----	Volts
	IF = 10 A			0.58		
	IF = 20 A			-----	0.81	
	IF = 5 A	T_J = 125 °C		0.43	-----	
	IF = 10 A			0.54		
	IF = 20 A			0.67	0.71	
Instantaneous Reverse Current	V_R = 70V	T_J = 25 °C	IR*		-----	uA
	V_R = 100V			-----	200	uA
	V_R = 70V	T_J = 125 °C			-----	mA
	V_R = 100V				35	mA

* Pulse width < 300 uS, Duty cycle < 2%

2. Characteristics Curves

Ratings and Characteristics Curves (TA = 25℃ unless otherwise specified)

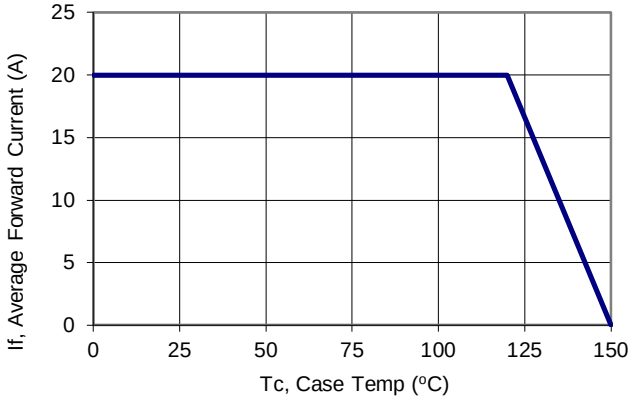


Figure 1: Current Derating, Case

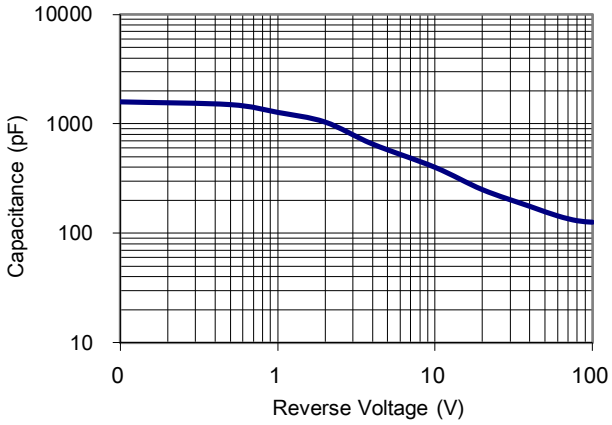


Figure 2: Typical Junction Capacitance

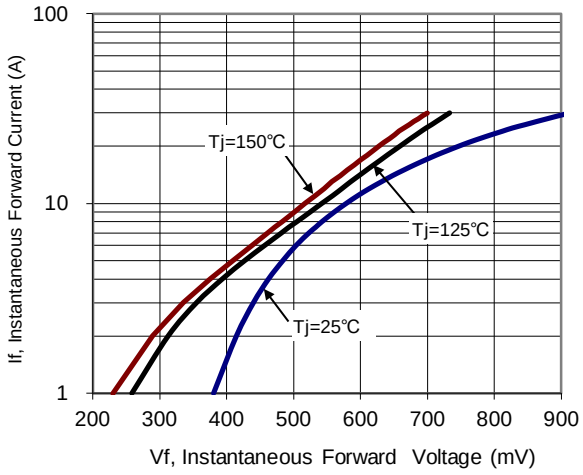


Figure 3: Typical Forward Voltage

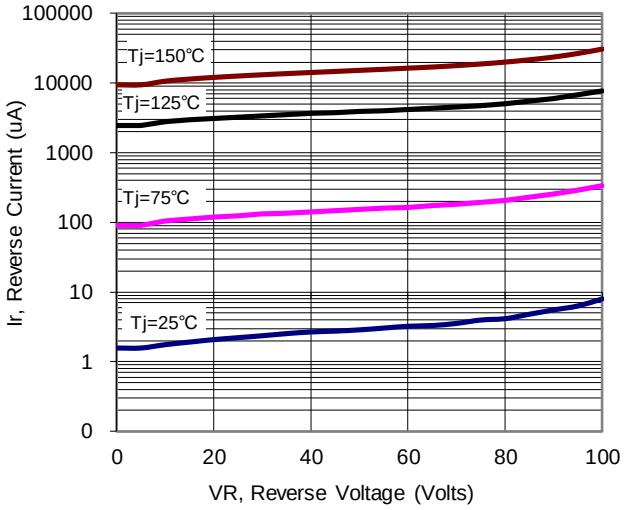
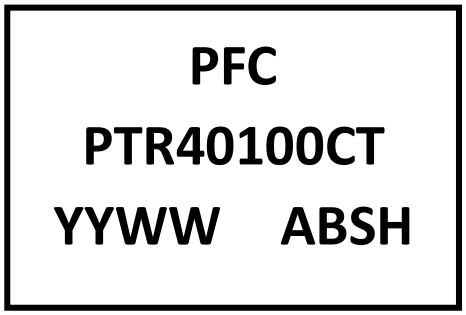


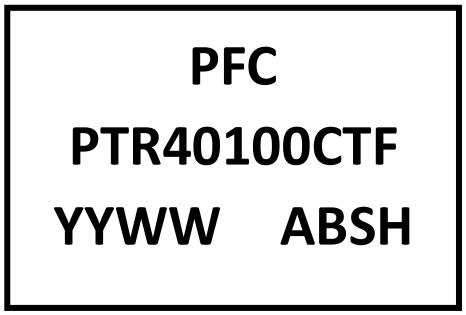
Figure 4: Typical Reverse Current

3. Marking information

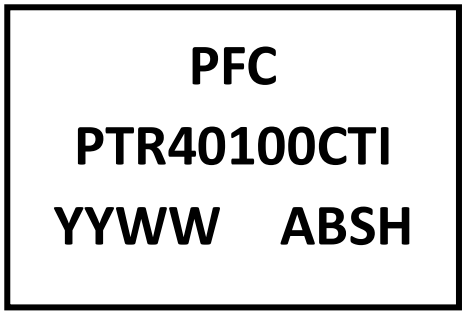
Top Marking Rule



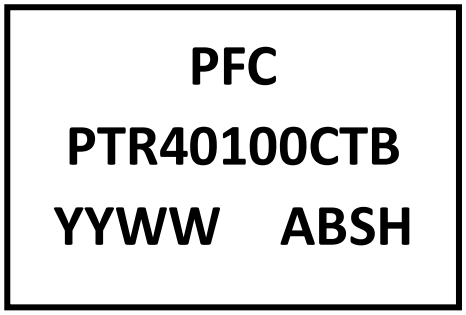
PTR40100CT = Product Type Marking Code
YYWW = Date Code
YY = Last two digits of year
WW = Week code
AB = Assembly code
S = Series Number
H = Halogen Free (N/A = common molding compound)



PTR40100CTF = Product Type Marking Code
YYWW = Date Code
YY = Last two digits of year
WW = Week code
AB = Assembly code
S = Series Number
H = Halogen Free (N/A = common molding compound)



PTR40100CTI = Product Type Marking Code
YYWW = Date Code
YY = Last two digits of year
WW = Week code
AB = Assembly code
S = Series Number
H = Halogen Free (N/A = common molding compound)

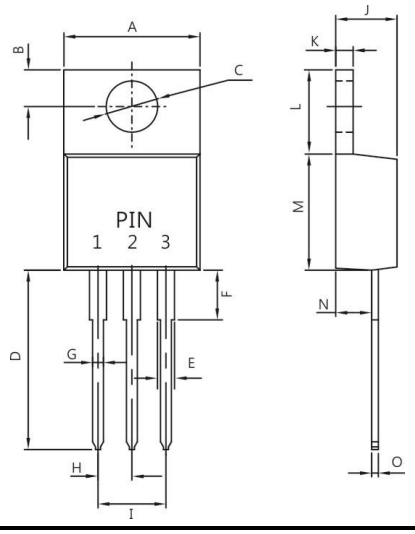


PTR40100CTB = Product Type Marking Code
YYWW = Date Code
YY = Last two digits of year
WW = Week code
AB = Assembly code
S = Series Number
H = Halogen Free (N/A = common molding compound)

4. Package information

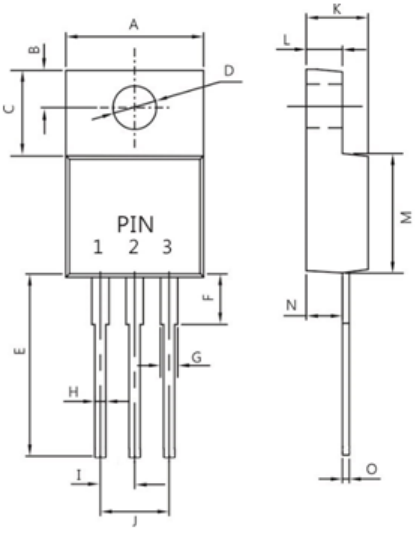
Package Outline Dimensions millimeters

TO-220AB



Dim.	Min.	Max.
A	-----	10.50
B	2.50	3.50
C	3.50	4.10
D	13.10	13.90
E	1.15	1.49
F	-----	4.50
G	0.65	0.95
H	2.29	2.79
I	4.80	5.30
J	4.40	4.80
K	1.14	1.40
L	5.84	6.86
M	8.50	9.60
N	2.03	2.92
O	0.30	0.64
All Dimensions in millimeter		

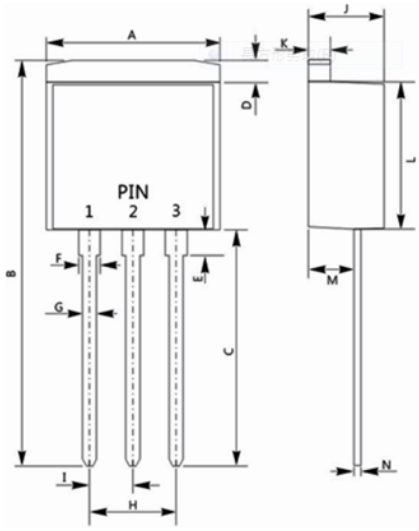
ITO-220AB



Dim.	Min.	Max.
A	-----	10.50
B	2.60	3.00
C	6.70	7.10
D	2.90	3.50
E	13.10	13.90
F	-----	4.00
G	1.11	1.45
H	0.40	0.80
I	2.40	2.80
J	5.00	5.40
K	4.30	4.70
L	2.90	3.30
M	8.20	9.00
N	2.50	2.90
O	0.40	0.80
All Dimensions in millimeter		

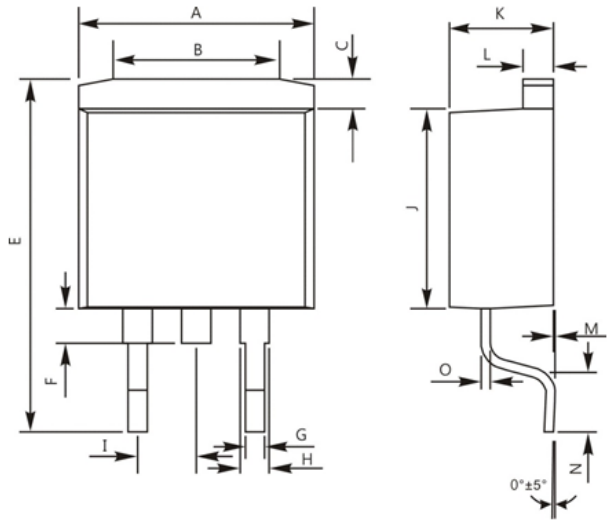
Package Outline Dimensions millimeters

TO-262 (I^2PAK)



Dim.	Min.	Max.
A	-----	10.40
B	23.44	24.20
C	13.25	14.25
D	1.27 Ref.	
E	-----	4.10
F	1.14	1.40
G	0.76	1.00
H	4.95	5.20
I	2.54 Ref.	
J	4.40	4.80
K	1.25	1.45
L	8.60	9.00
M	2.50	2.80
N	0.35	0.56
All Dimensions in millimeter		

TO-263 (D^2PAK)



Dim.	Min.	Max.
A	9.65	10.69
B	7.30 Ref.	
C	1.30 Ref.	
E	14.70	15.90
F	1.5 Ref.	
G	0.76	1.00
H	1.14	1.70
I	2.54 Ref.	
J	8.55	9.50
K	4.40	4.85
L	1.25	1.50
M	----	0.25
N	2.30	2.80
O	0.36	0.60
All Dimensions in millimeter		

5. Ordering information

Part Number	Package	Delivery mode
PTR40100CT	TO-220AB	50 pieces / tube
PTR40100CTF	ITO-220AB	50 pieces / tube
PTR40100CTI	TO-262	50 pieces / tube
PTR40100CTB	TO-263	800 pieces / 13'' diameter reel

Note: For Halogen Free molding compound, add "H" suffix to part number above.

Mechanical

- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.07 ounces (1.96grams) - TO-220AB
  0.06 ounces (1.74grams) - ITO-220AB
  0.05 ounces (1.45 grams) - TO-262
  0.04 ounces (1.16 grams) - TO-263

- Mounting Torque : Recommended 4~5 kg-cm.