

Schottky Barrier Rectifier

**RoHS
Compliant**



Features

- Metal of silicon rectifier, majority carrier conduction
- Trench schottky technology
- Low power loss, high efficiency
- High current capability, low VF
- High surge capacity
- Plastic package has UL flammability classification 94V-0
- For use in low voltage,high frequency inverters, free wheeling, switching power supplies, DC-DC converter, and polarity protection applications

Mechanical Data

Case	: TO-220AB
Polarity	: As marked on the body
Weight	: 0.08ounces, 2.24 grams
Mounting position	: Any

Maximum Ratings And Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Characteristic	Symbol	Values	Unit		
Maximum Ratings (TA = 25 °C unless otherwise noted)					
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	45	V		
Maximum RMS Voltage	V _{RMS}	31			
Maximum DC Blocking Voltage	V _{DC}	45			
Maximum Average Forward Rectified Current (See Fig.1)	I _(AV)	40	A		
Maximum Average Forward Rectified Current (Per Leg)		20			
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load	I _{FSM}	300			
Peak repetitive reverse current at tp = 2µs, 1kHz	I _{RRM}	1			
Operating Temperature Range	T _J	-55 to +150		°C	
Storage Temperature Range	T _{STG}	-55 to +175			
Electrical Characteristics (TA = 25 °C unless otherwise noted)					
Parameter / Conditions	Symbol	Typ	Max	Unit	
Breakdown voltage per diode	V _{BR}	46 (minimun)	-	V	
Forward Voltage (Note1)	V _F	I _F =10A @T _J =25°C	0.37		0.39
		I _F =10A @T _J =125°C	0.27		0.29
		I _F =20A @T _J =25°C	0.43		0.45
		I _F =20A @T _J =125°C	0.36		0.37
Maximum DC Reverse Current at Rated DC Bolcking Voltage	I _R	500 120		µA mA	

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Parameter / Conditions	Symbol	Values	Unit
Typical Junction Capacitance (Note 2)	C _J	2793	pF
Thermal Characteristics (T_A = 25 °C unless otherwise noted)			
Parameter	Symbol	Values	Unit
Thermal Resistance Per Diode (Note3)	R _{θJC}	3	°C/W

Notes:

1. 300µs pulse width, 2% duty cycle.
2. Measured at 1MHz and applied reverse voltage of 5V DC.
3. Thermal resistance junction to case.

Rating and Characteristic Curves

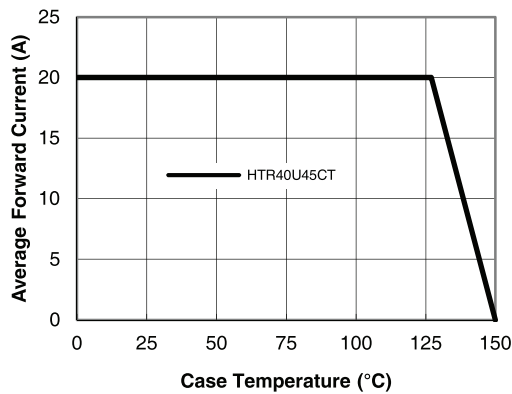


Figure 1. Forward Current Derating Curve

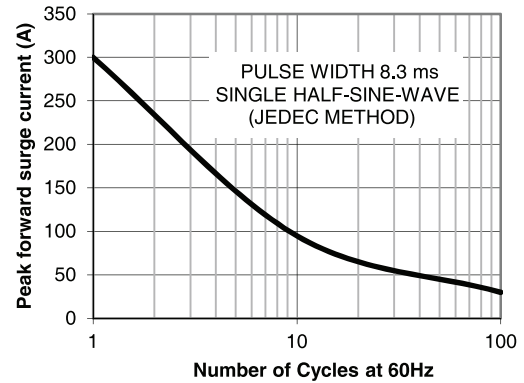


Figure 2. Maximum NON-Repetitive

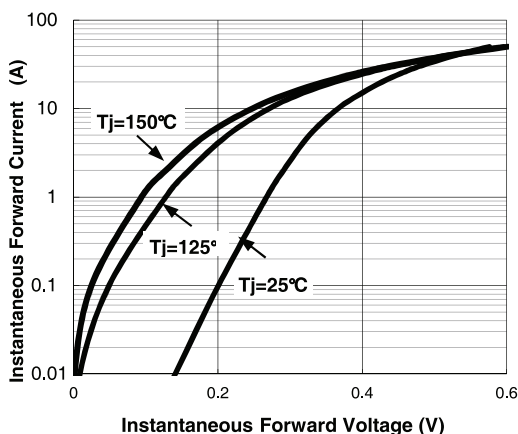


Figure 3. Typical Instantaneous Forward Characteristics Per Leg

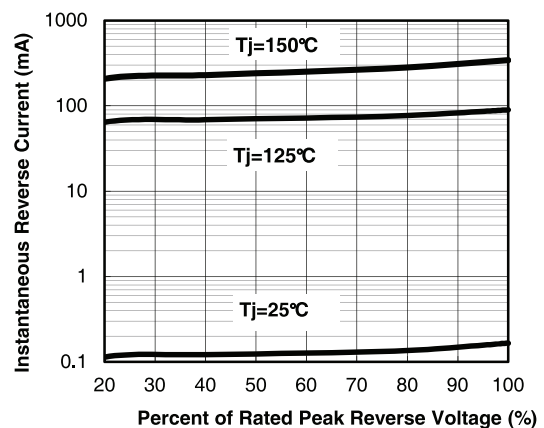


Figure 4. Typical Reverse Characteristics

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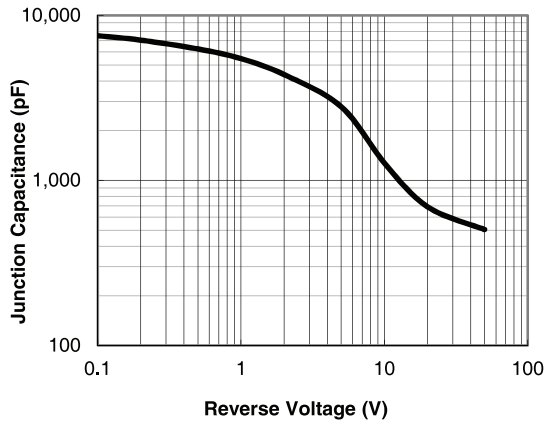


Figure 5. Typical Junction Capacitance

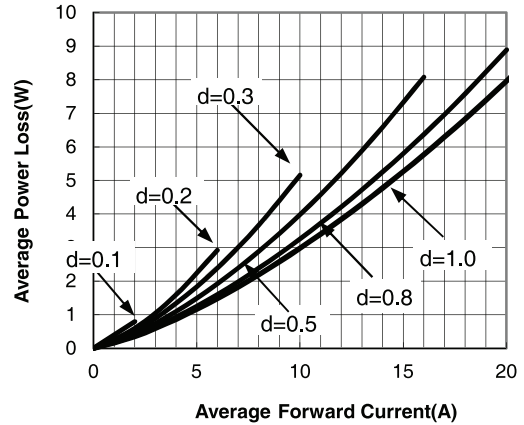
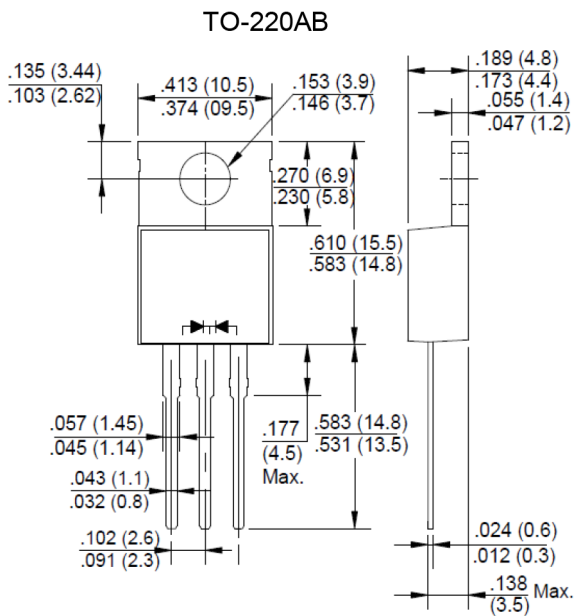


Figure 6. Forward Power Loss Characteristics

Dimension:



Dimensions : Inches (Millimetres)

Pin Configuration



Part Number Table

Description	Part Number
Schottky Barrier Rectifier	HTR40U45CT

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