

# 30A, 80V Schottky Barrier Rectifier

#### **FEATURES**

- AEC-Q101 qualified available
- Low power loss, high efficiency
- Guard ring for overvoltage protection
- · High surge current capability
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

#### **APPLICATIONS**

- Switching mode power supply (SMPS)
- Adapters
- DC to DC converters

#### **MECHANICAL DATA**

• Case: ITO-220AB

Molding compound meets UL 94V-0 flammability rating

• Terminal: Matte tin plated leads, solderable per J-STD-002

Mounting torque: 0.56 N·m maximum
Meet JESD 201 class 2 whisker test

Polarity: As marked

• Weight: 1.70g (approximately)

KEY PARAMETERS				
PARAMETER	VALUE	UNIT		
I <sub>F</sub>	30	Α		
$V_{RRM}$	80	V		
I <sub>FSM</sub>	200	Α		
T <sub>J MAX</sub>	150	°C		
Package	ITO-220AB			
Configuration	Dual dies			

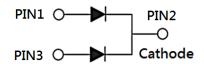








ITO-220AB



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C unless otherwise noted)				
PARAMETER	SYMBOL	MBRF3080CT	UNIT	
Marking code on the device		MBRF3080CT		
Repetitive peak reverse voltage	V <sub>RRM</sub>	80	V	
Reverse voltage, total rms value	V <sub>R(RMS)</sub>	56	V	
Forward current	I <sub>F</sub>	30	А	
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I <sub>FSM</sub>	200	А	
Peak repetitive reverse surge current <sup>(1)</sup>	I <sub>RRM</sub>	0.5	А	
Critical rate of rise of off-state voltage	dv/dt	10,000	V/µs	
Junction temperature	T <sub>J</sub>	-55 to +150	°C	
Storage temperature	T <sub>STG</sub>	-55 to +150	°C	

#### Notes:

1.  $tp = 2.0\mu s$ , 1.0KHz

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THERMAL PERFORMANCE				
PARAMETER	SYMBOL	TYP	UNIT	
Junction-to-case thermal resistance	R <sub>eJC</sub>	5	°C/W	

ELECTRICAL SPECIFICATIONS (T <sub>A</sub> = 25°C unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 15A,T <sub>J</sub> = 25°C	V <sub>F</sub>	-	0.84	V
	$I_F = 30A, T_J = 25^{\circ}C$		-	0.94	V
	I <sub>F</sub> = 15A,T <sub>J</sub> = 125°C		-	0.70	V
	I <sub>F</sub> = 30A,T <sub>J</sub> = 125°C		-	0.82	V
Reverse current @ rated V <sub>R</sub> per diode <sup>(2)</sup>	T <sub>J</sub> = 25°C	I <sub>R</sub>	-	200	μΑ
	T <sub>J</sub> = 125°C		-	10	mA

## Notes:

- 1. Pulse test with PW = 0.3ms
- 2. Pulse test with PW = 30ms

ORDERING INFORMATION				
ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING		
MBRF3080CT	ITO-220AB	50 / Tube		
MBRF3080CTH	ITO-220AB	50 / Tube		

#### Notes:

1. "H" means AEC-Q101 qualified



#### **CHARACTERISTICS CURVES**

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

**Fig.1 Forward Current Derating Curve** 

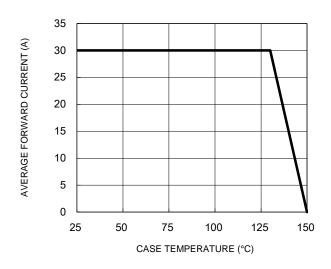


Fig.2 Typical Junction Capacitance

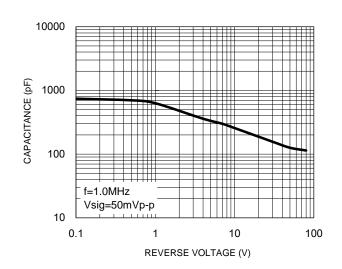
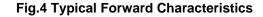
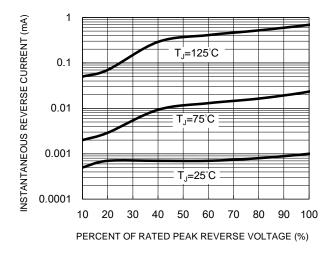


Fig.3 Typical Reverse Characteristics





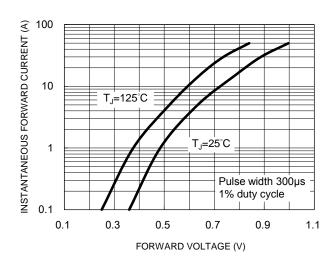
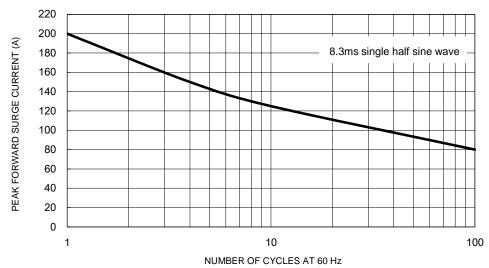


Fig.5 Maximum Non-Repetitive Forward Surge Current



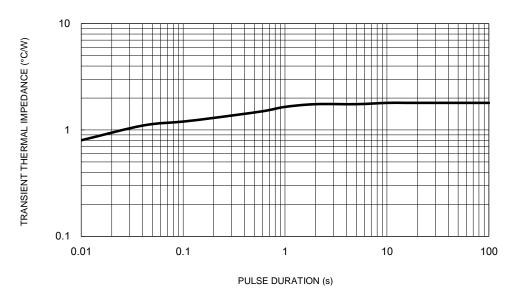
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## **CHARACTERISTICS CURVES**

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

Fig.6 Typical Transient Thermal Impedance

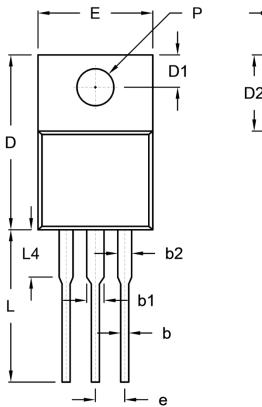


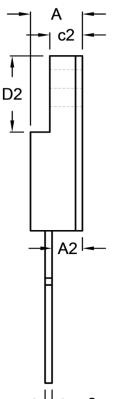




## **PACKAGE OUTLINE DIMENSIONS**

## ITO-220AB





DIM.	Unit (mm)		Unit (	(inch)	
	Min.	Max.	Min.	Max.	
Α	4.30	4.70	0.169	0.185	
A2	2.30	2.96	0.091	0.117	
b	0.50	0.90	0.020	0.035	
b1	-	1.80	-	0.071	
b2	0.95	1.45	0.037	0.057	
С	0.46	0.76	0.018	0.030	
c2	2.50	3.16	0.098	0.124	
D	14.80	15.50	0.583	0.610	
D1	2.40	3.20	0.094	0.126	
D2	6.30	6.90	0.248	0.272	
E	9.60	10.30	0.378	0.406	
е	2.41	2.67	0.095	0.105	
L	12.60	13.80	0.496	0.543	
L4	-	4.10	-	0.161	
Р	3.00	3.40	0.118	0.134	

### **MARKING DIAGRAM**



P/N = Marking Code G = Green Compound

YWW = Date Code F = Factory Code



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