

40A, 60V Schottky Barrier Surface Mount Rectifier

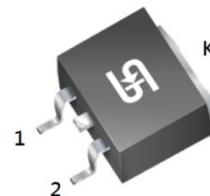
FEATURES

- AEC-Q101 qualified
- Low power loss, high efficiency
- Ideal for automated placement
- Guard ring for overvoltage protection
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	40	A
V_{RRM}	60	V
I_{FSM}	300	A
$T_{J\ MAX}$	175	°C
Package	TO-263AB (D ² PAK)	
Configuration	Dual dies	

APPLICATIONS

- Low voltage, high freq. inverter
- DC/DC converter
- Freewheeling diodes
- Reverse battery protection
- Car lighting



TO-263AB (D²PAK)



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

PARAMETER	SYMBOL	MBRS4060CTH	UNIT
Marking code on the device		MBRS4060CT	
Repetitive peak reverse voltage	V_{RRM}	60	V
Reverse voltage, total rms value	$V_{R(RMS)}$	42	V
Forward current	I_F	40	A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	300	A
Critical rate of rise of off-state voltage	dv/dt	10,000	V/μs
Junction temperature	T_J	-55 to +175	°C
Storage temperature	T_{STG}	-55 to +175	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case thermal resistance	$R_{\Theta JC}$	1.5	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 20A, T_J = 25^\circ C$	V_F	-	0.80	V
	$I_F = 40A, T_J = 25^\circ C$		-	1.00	V
	$I_F = 20A, T_J = 125^\circ C$		-	0.70	V
	$I_F = 40A, T_J = 125^\circ C$		-	0.90	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ C$	I_R	-	100	μA
	$T_J = 125^\circ C$		-	20	mA

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
MBRS4060CTH	TO-263AB (D ² PAK)	800 / Tape & Reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

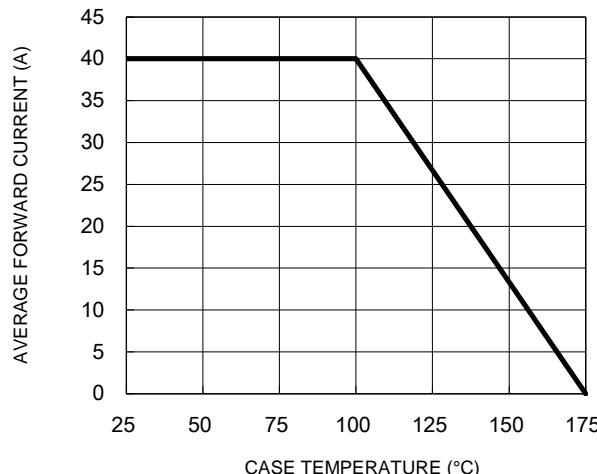


Fig.2 Typical Junction Capacitance

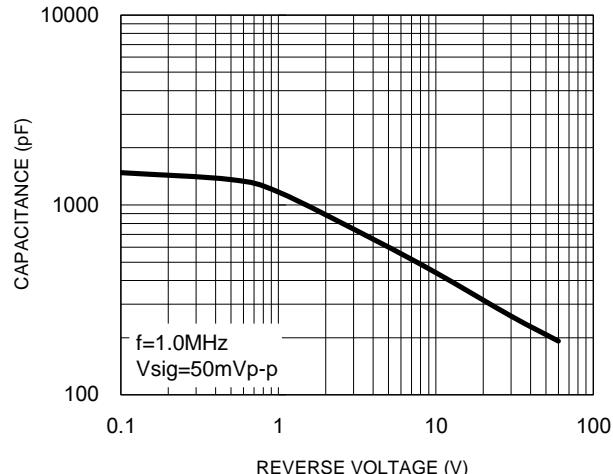


Fig.3 Typical Reverse Characteristics

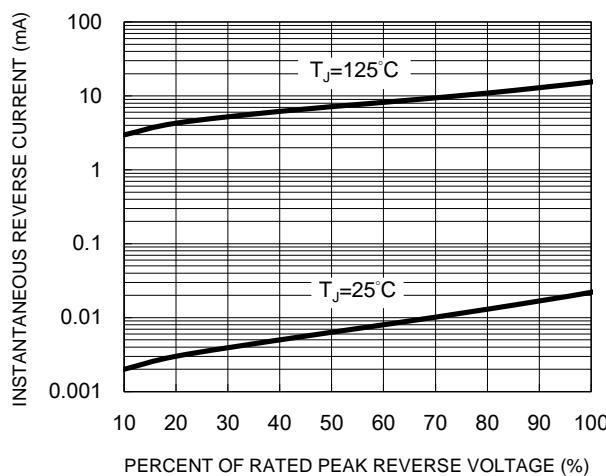


Fig.4 Typical Forward Characteristics

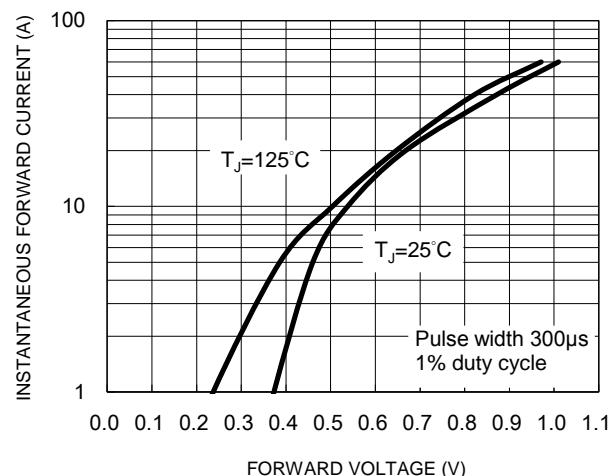
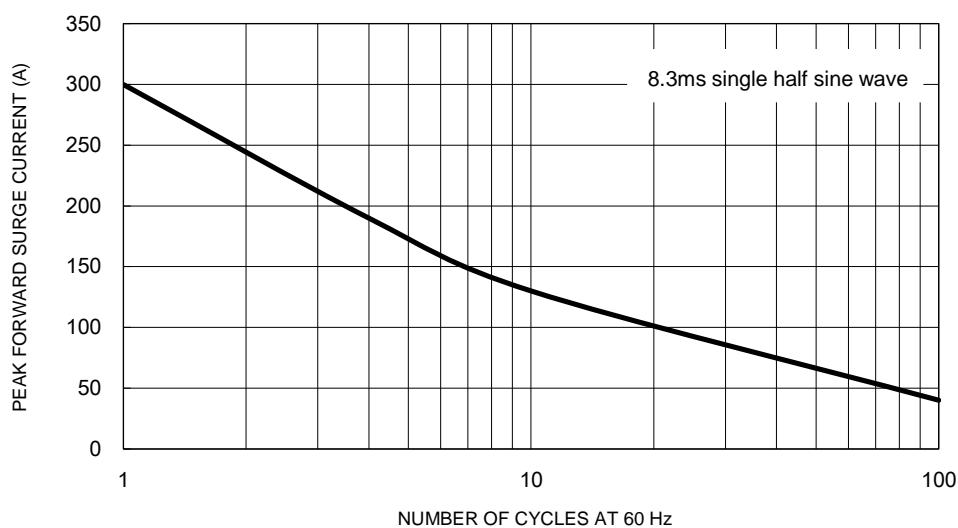
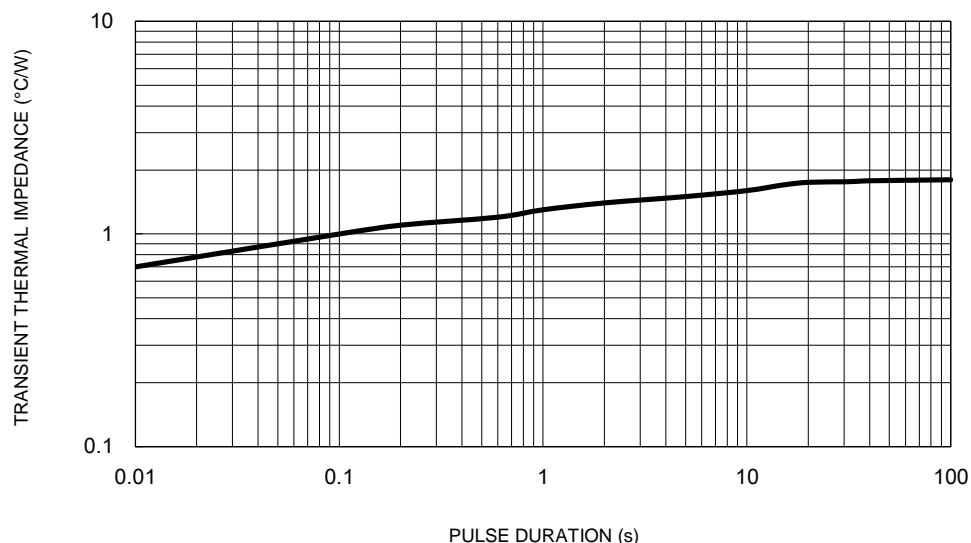
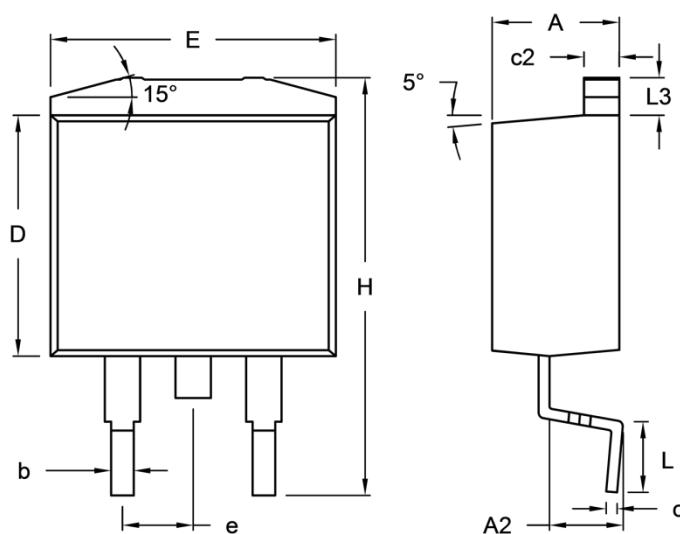


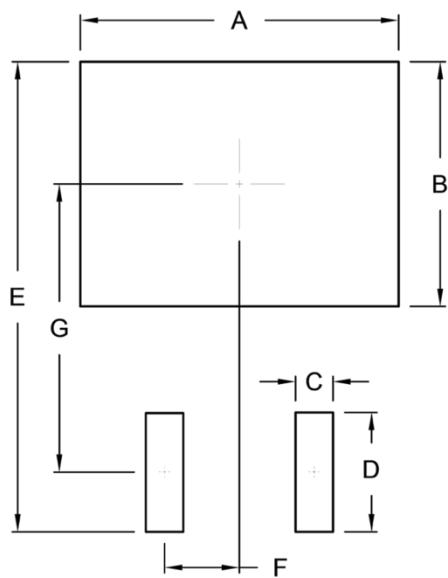
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES $(T_A = 25^\circ\text{C}$ unless otherwise noted)**Fig.6 Typical Transient Thermal Impedance**

PACKAGE OUTLINE DIMENSIONS
TO-263AB (D²PAK)


DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.44	4.70	0.175	0.185
A2	2.03	2.79	0.080	0.110
b	0.68	0.94	0.027	0.037
c	0.36	0.53	0.014	0.021
c2	1.14	1.40	0.045	0.055
D	8.25	9.25	0.325	0.364
E	-	10.50	-	0.413
e	2.41	2.67	0.095	0.105
H	14.60	15.88	0.575	0.625
L	2.29	2.79	0.090	0.110
L3	1.14	1.40	0.045	0.055

SUGGESTED PAD LAYOUT


Symbol	Unit (mm)	Unit (inch)
A	10.80	0.425
B	8.30	0.327
C	1.27	0.050
D	4.05	0.159
E	15.95	0.628
F	2.54	0.100
G	9.775	0.385

MARKING DIAGRAM


P/N = Marking Code
 G = Green Compound
 YWW = Date Code
 F = Factory Code

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