www.omseni.com

OM SENI

MBRD1035CTLT4G Series,
SBRD81035CTLT4G Series
Switch Mode Schottky Power Rectifier

DPAK Power Surface Mount Package

The MBRD1035CTL employs the Schottky Barrier principle in a large area metal−to−silicon power diode. State of the art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency switching power supplies, free wheeling diode and polarity protection diodes.

Features

- Highly Stable Oxide Passivated Junction
- Guardring for Stress Protection
- Matched Dual Die Construction − May be Paralleled for High Current Output
- High dv/dt Capability
- Short Heat Sink Tap Manufactured − Not Sheared
- Very Low Forward Voltage Drop
- Epoxy Meets UL 94 V−0 @ 0.125 in
- SBRD8 Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- These Devices are Pb−Free and are RoHS Compliant*

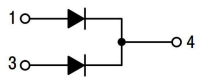
Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 0.4 Gram (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- ESD Rating:
  - Human Body Model = 3B (> 8 kV)
  - Machine Model = C (> 400 V)

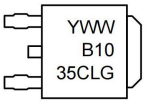
SCHOTTKY BARRIER RECTIFIER 10 AMPERES 35 VOLTS



DPAK
CASE 369C



MARKING DIAGRAM



Y	= Year
WW	= Work Week
B1035CL	= Device Code
G	= Pb−Free Package

OM SENI

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	35	V
Average Rectified Forward Current (At Rated V_R, T_C = 115°C) Per Leg Per Package	I_O	 5.0 10	A
Peak Repetitive Forward Current (At Rated V_R, Square Wave, 20 kHz, T_C = 115°C) Per Leg	I_{FRM}	 10	A
Non−Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz) Per Package	I_{FSM}	 50	A
Storage / Operating Case Temperature	T_{stg}, T_c	−55 to +150	°C
Operating Junction Temperature (Note 1)	T_J	−55 to +150	°C
Voltage Rate of Change (Rated V_R, T_J = 25°C)	dv/dt	10,000	V/μs

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. The heat generated must be less than the thermal conductivity from Junction−to−Ambient: $dP_D/dT_J < 1/R_{\theta JA}$.

THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Thermal Resistance, Junction−to−Case Per Leg	$R_{\theta JC}$	 3.0	°C/W
Thermal Resistance, Junction−to−Ambient (Note 2) Per Leg	$R_{\theta JA}$	 137	°C/W

2. Rating applies when using minimum pad size, FR4 PC Board

ELECTRICAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 3) (See Figure 2) Per Leg (I_F = 5 Amps, T_J = 25°C) (I_F = 5 Amps, T_J = 100°C) (I_F = 10 Amps, T_J = 25°C) (I_F = 10 Amps, T_J = 100°C)	V_F	 0.47 0.41 0.56 0.55	V
Maximum Instantaneous Reverse Current (Note 3) (See Figure 4) Per Leg (V_R = 35 V, T_J = 25°C) (V_R = 35 V, T_J = 100°C) (V_R = 17.5 V, T_J = 25°C) (V_R = 17.5 V, T_J = 100°C)	I_R	 2.0 30 0.20 5.0	mA

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

3. Pulse Test: Pulse Width ≤ 250 μs, Duty Cycle ≤ 2.0%

OM SENI

ORDERING INFORMATION

Device	Package	Shipping†
MBRD1035CTLT4G	DPAK (Pb−Free)	2,500 Units / Tape & Reel
SBRD81035CTLT4G*		2,500 Units / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.
*SBRD8 Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable.

TYPICAL CHARACTERISTICS

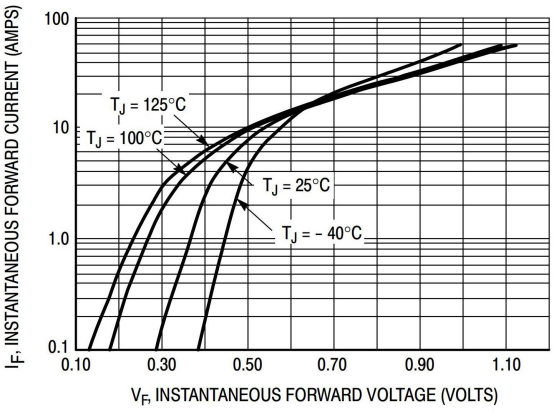


Figure 1. Typical Forward Voltage Per Leg

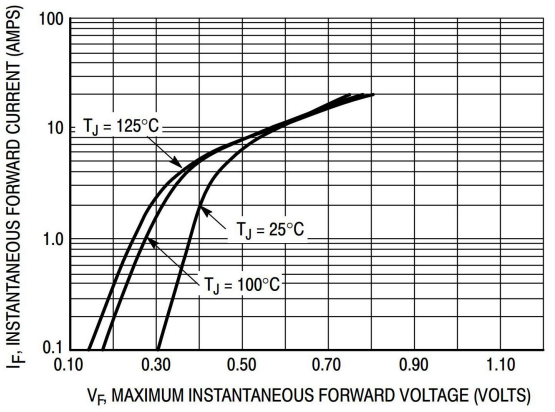


Figure 2. Maximum Forward Voltage Per Leg

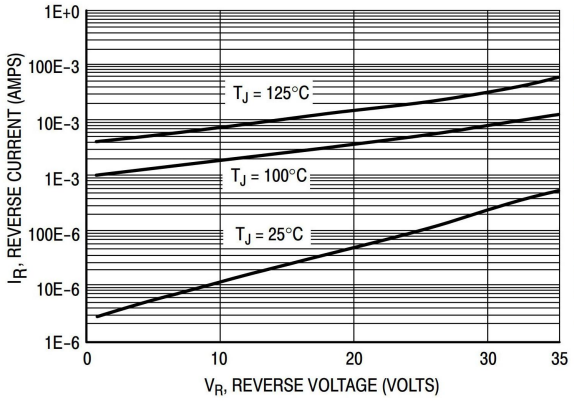


Figure 3. Typical Reverse Current Per Leg

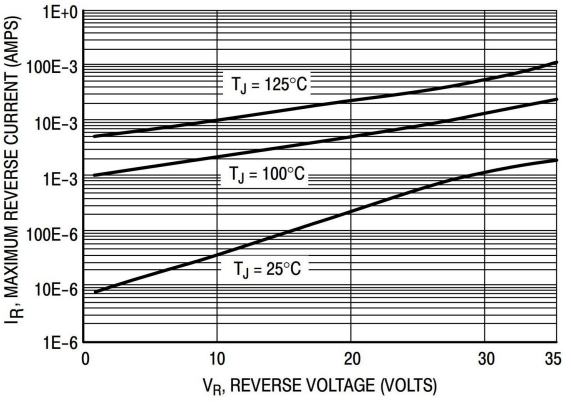


Figure 4. Maximum Reverse Current Per Leg

OM SENI

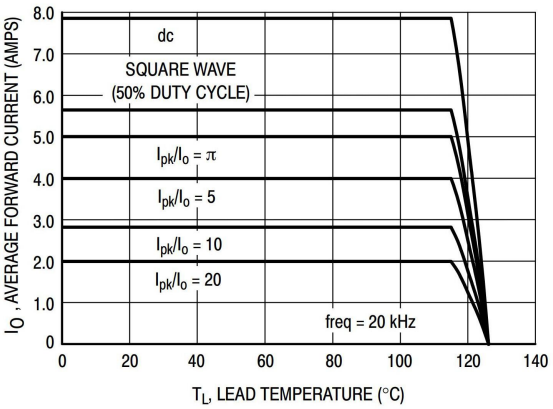


Figure 5. Current Derating Per Leg

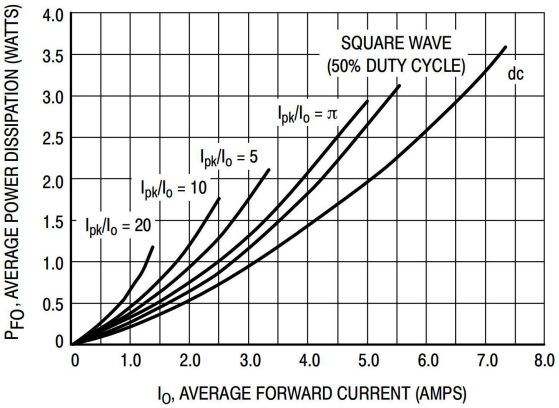


Figure 6. Forward Power Dissipation Per Leg

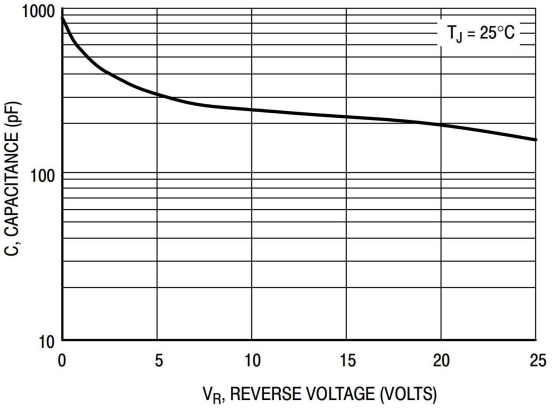


Figure 7. Capacitance Per Leg

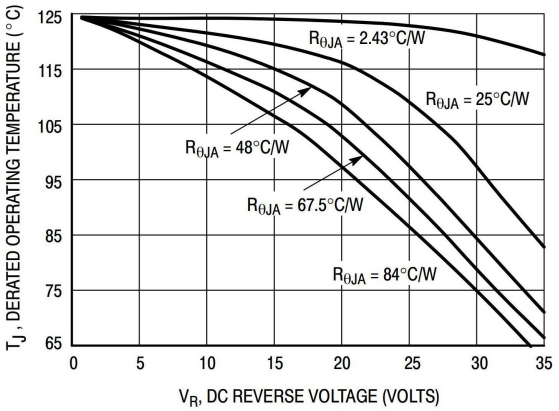


Figure 8. Typical Operating Temperature Derating Per Leg *

OM SENI

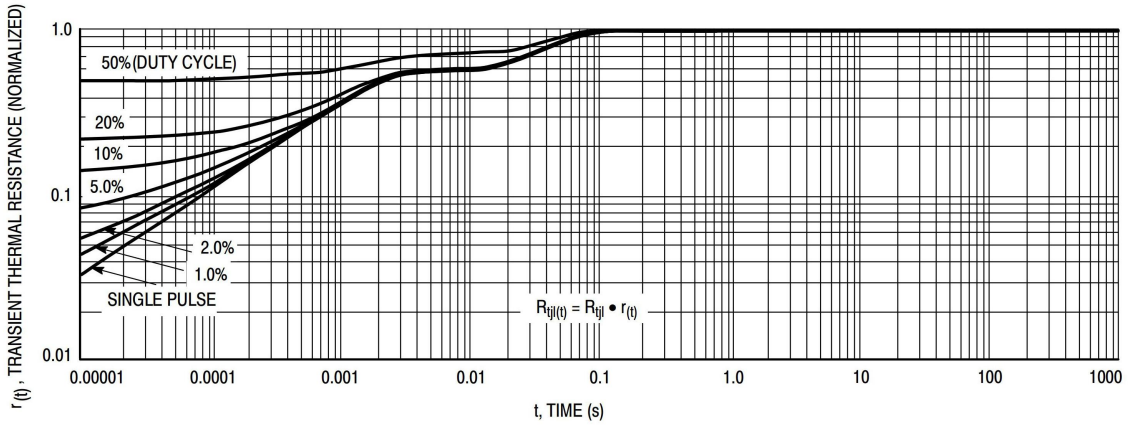


Figure 9. Thermal Response Junction to Case (Per Leg)

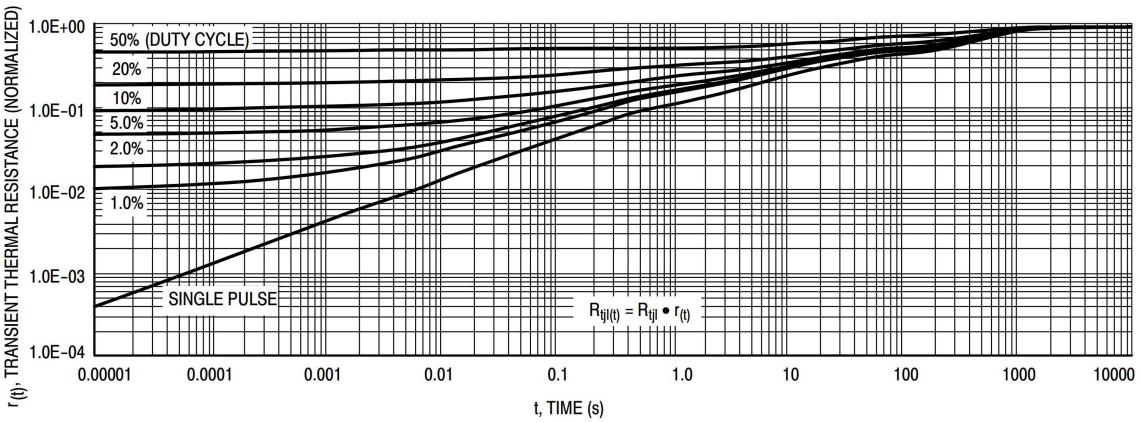


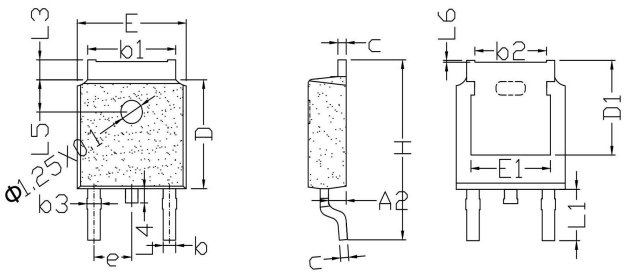
Figure 10. Thermal Response Junction to Ambient (Per Leg)

OM SENI

Ordering Information

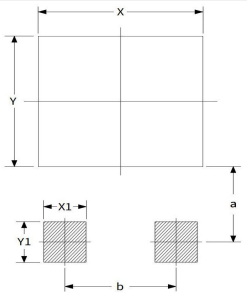
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
TO-252	R3	0.305	2500	5000	25000	13''

Package Outline Dimensions (TO-252)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A2	0.90	1.10	0.035	0.043
b	0.66	0.86	0.026	0.034
b1	5.10	5.46	0.201	0.215
b2	4.27	4.37	0.168	0.172
b3	0.78	0.90	0.031	0.035
c	0.45	0.55	0.018	0.022
D	5.90	6.30	0.232	0.248
D1	5.35 REF.		0.211REF.	
E	6.30	6.70	0.248	0.264
E1	4.83 REF.		0.190 REF.	
e	2.18	2.38	0.086	0.094
H	9.80	10.4	0.386	0.409
L1	2.70	3.10	0.106	0.122
L3	0.80	1.20	0.031	0.047
L4	0.60	1.00	0.024	0.039
L5	1.8 REF.		0.071 REF.	
L6	-	0.12	-	0.005

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
a	3.70	-	0.146	-
b	4.37	-	0.172	-
X	-	5.80	-	0.228
X1	-	1.20	-	0.047
Y	-	5.85	-	0.230
Y1	-	2.00	-	0.079