



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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MBD54DWT1G

Preferred Device

Dual Schottky Barrier Diodes

These Schottky barrier diodes are designed for high speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction loss. Miniature surface mount package is excellent for hand held and portable applications where space is limited.

Features

- Extremely Fast Switching Speed
- Low Forward Voltage – 0.35 V @ $I_F = 10 \text{ mA}$
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS ($T_J = 125^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	30	V
Forward Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_F	150 1.2	mW mW/ $^\circ\text{C}$
Forward Current (DC)	I_F	200 Max	mA
Junction Temperature	T_J	125 Max	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

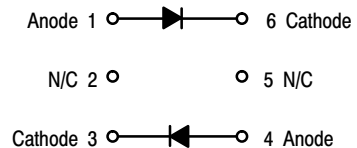
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



ON Semiconductor[®]

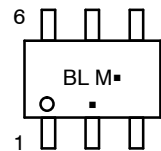
<http://onsemi.com>

30 VOLTS DUAL HOT-CARRIER DETECTOR AND SWITCHING DIODES



**SOT-363
CASE 419B
STYLE 6**

MARKING DIAGRAM



M = Date Code
▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping [†]
MBD54DWT1G	SOT-363 (Pb-Free)	3000 / Tape & Reel

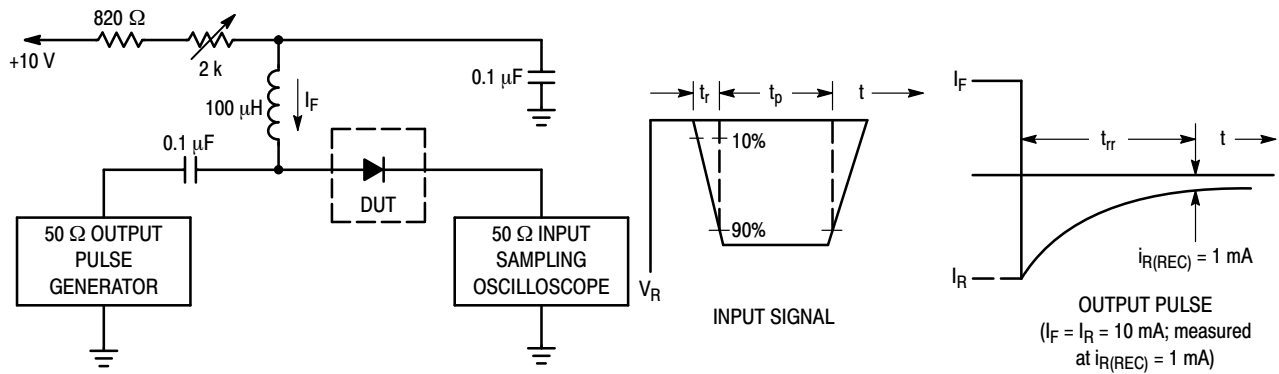
[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

MBD54DWT1G

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R = 10 \mu\text{A}$)	$V_{(BR)R}$	30	-	-	V
Total Capacitance ($V_R = 1.0 \text{ V}$, $f = 1.0 \text{ MHz}$)	C_T	-	7.6	10	pF
Reverse Leakage ($V_R = 25 \text{ V}$)	I_R	-	0.5	2.0	μA dc
Forward Voltage ($I_F = 0.1 \text{ mA}$ dc)	V_F	-	0.22	0.24	Vdc
Forward Voltage ($I_F = 30 \text{ mA}$ dc)	V_F	-	0.41	0.5	Vdc
Forward Voltage ($I_F = 100 \text{ mA}$ dc)	V_F	-	0.52	1.0	Vdc
Reverse Recovery Time ($I_F = I_R = 10 \text{ mA}$ dc, $I_{R(\text{REC})} = 1.0 \text{ mA}$ dc) (Figure 1)	t_{rr}	-	-	5.0	ns
Forward Voltage ($I_F = 1.0 \text{ mA}$ dc)	V_F	-	0.29	0.32	Vdc
Forward Voltage ($I_F = 10 \text{ mA}$ dc)	V_F	-	0.35	0.40	Vdc
Forward Current (DC)	I_F	-	-	200	mA
Repetitive Peak Forward Current	I_{FRM}	-	-	300	mA
Non-Repetitive Peak Forward Current ($t < 1.0 \text{ s}$)	I_{FSM}	-	-	600	mA



- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

MBD54DWT1G

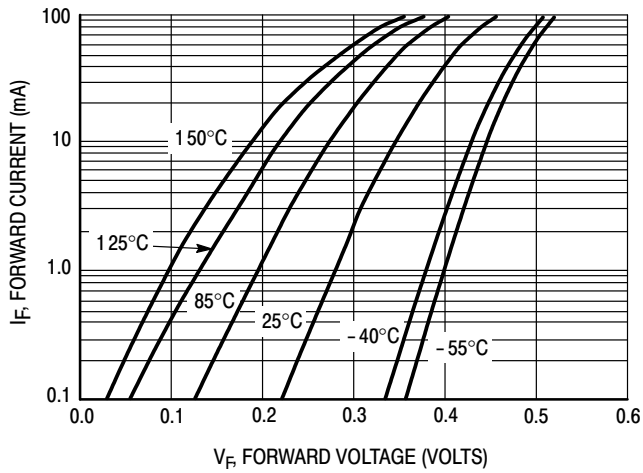


Figure 2. Forward Voltage

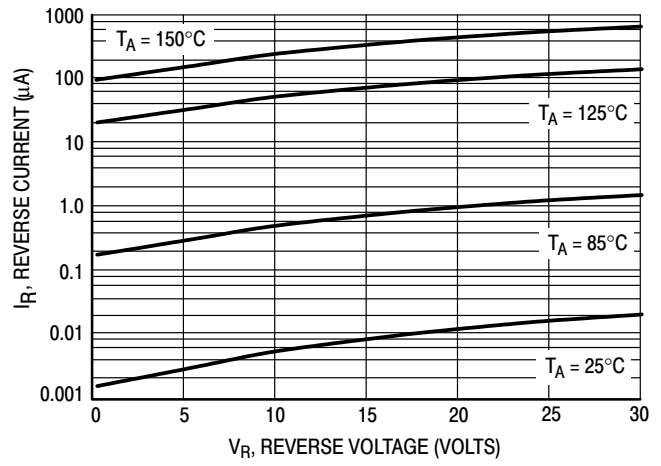


Figure 3. Leakage Current

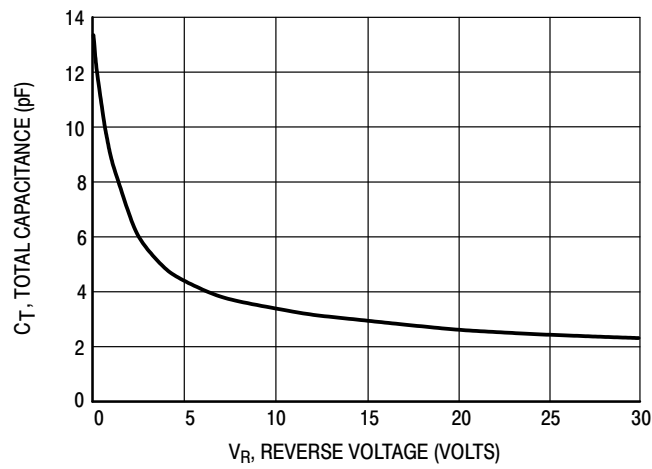
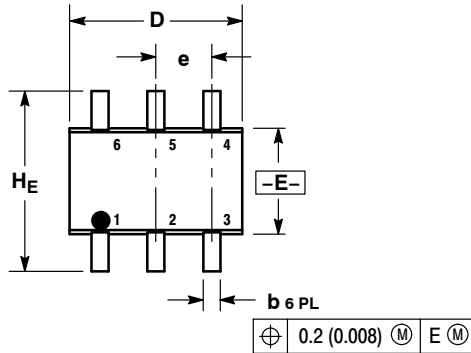


Figure 4. Total Capacitance

MBD54DWT1G

PACKAGE DIMENSIONS

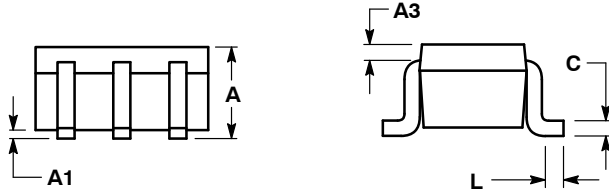
SC-88 (SOT-363)
CASE 419B-02
ISSUE W



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 419B-01 OBSOLETE, NEW STANDARD 419B-02.

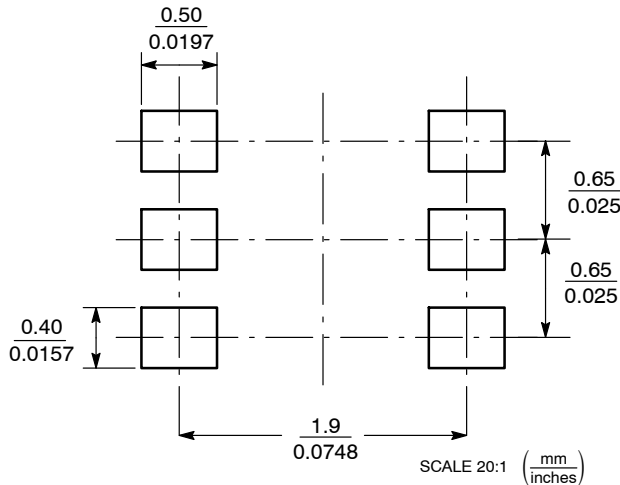
DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.95	1.10	0.031	0.037	0.043
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.20 REF			0.008 REF		
b	0.10	0.21	0.30	0.004	0.008	0.012
C	0.10	0.14	0.25	0.004	0.005	0.010
D	1.80	2.00	2.20	0.070	0.078	0.086
E	1.15	1.25	1.35	0.045	0.049	0.053
e	0.65 BSC			0.026 BSC		
L	0.10	0.20	0.30	0.004	0.008	0.012
HE	2.00	2.10	2.20	0.078	0.082	0.086



STYLE 6:

- PIN 1. ANODE 2
- 2. N/C
- 3. CATHODE 1
- 4. ANODE 1
- 5. N/C
- 6. CATHODE 2

SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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