MAXIMUM RATINGS (T_A = 25°C, unless otherwise noted.)

Rating	Symbol	Value	Unit
Input Voltage	V_I	−35	Vdc
Power Dissipation			
Case 221A (TO−220−3)			
T_A = 25°C	P_D	Internally Limited	W
Thermal Resistance, Junction−to−Ambient	θ_{JA}	65	°C/W
Thermal Resistance, Junction−to−Case	θ_{JC}	5.0	°C/W
Case 369C (DPAK−3)			
T_A = 25°C	P_D	Internally Limited	W
Thermal Resistance, Junction−to−Ambient	θ_{JA}	92	°C/W
Thermal Resistance, Junction−to−Case	θ_{JC}	6.0	°C/W
Storage Junction Temperature	T_{stg}	−65 to +150	°C
Operating Junction Temperature Range	T_J	−40 to +150	°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.

*This device series contains ESD protection and exceeds the following tests:
Human Body Model 2000 V per MIL_STD_883, Method 3015
Machine Model Method 200 V

MC79M05B, C

ELECTRICAL CHARACTERISTICS (V_I = −10 V, I_O = 350 mA, T_{low} to T_{high} (Note 2), unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage (T_J = 25°C)	V_O	−4.8	−5.0	−5.2	Vdc
Line Regulation, T_J = 25°C (Note 1) −7.0 Vdc ≥ V_I ≥ −25 Vdc −8.0 Vdc ≥ V_I ≥ −18 Vdc	Reg_{line}	 – –	 7.0 2.0	 50 30	mV
Load Regulation, T_J = 25°C (Note 1) 5.0 mA ≤ I_O ≤ 500 mA	Reg_{load}	–	30	100	mV
Output Voltage −7.0 Vdc ≥ V_I ≥ −25 Vdc, 5.0 mA ≤ I_O ≤ 350 mA	V_O	−4.75	–	−5.25	Vdc
Input Bias Current (T_J = 25°C)	I_{IB}	–	4.3	8.0	mA
Input Bias Current Change −8.0 Vdc ≥ V_I ≥ −25 Vdc, I_O = 350 mA 5.0 mA ≤ I_O ≤ 350 mA, V_I = −10 V	ΔI_{IB}	 – –	 – –	 0.4 0.4	mA
Output Noise Voltage, T_A = 25°C, 10 Hz ≤ f ≤ 100 kHz	V_n	–	40	–	μV
Ripple Rejection (f = 120 Hz)	RR	54	66	–	dB
Dropout Voltage I_O = 500 mA, T_J = 25°C	V_I−V_O	–	1.1	–	Vdc
Average Temperature Coefficient of Output Voltage I_O = 5.0 mA, 0°C ≤ T_J ≤ 125°C	$\Delta V_O/\Delta T$	–	0.2	–	mV/°C

1. Load and line regulation are specified at constant temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.
2. B = T_{low} to T_{high}, −40°C < T_J < 125°C C = T_{low} to T_{high}, 0°C < T_J < 125°C.

MC79M08B, C
ELECTRICAL CHARACTERISTICS (V_I = −10 V, I_O = 350 mA, T_{low} to T_{high} (Note 4), unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage (T_J = 25°C)	V_O	−7.7	−8.0	−8.3	Vdc
Line Regulation, T_J = 25°C (Note 3) −10.5 Vdc ≥ V_I ≥ −25 Vdc −11 Vdc ≥ V_I ≥ −21 Vdc	Reg_{line}	 – –	 5.0 3.0	 80 50	mV
Load Regulation, T_J = 25°C (Note 3) 5.0 mA ≤ I_O ≤ 500 mA	Reg_{load}	 –	 30	 100	mV
Output Voltage −10.5 Vdc ≥ V_I ≥ −25 Vdc, 5.0 mA ≤ I_O ≤ 350 mA	V_O	 −7.6	 −8.0	 −8.4	Vdc
Input Bias Current (T_J = 25°C)	I_{IB}	–	–	8.0	mA
Input Bias Current Change −10.5 Vdc ≥ V_I ≥ −25 Vdc, I_O = 350 mA 5.0 mA ≤ I_O ≤ 350 mA, V_I = −10 V	ΔI_{IB}	 – –	 – –	 0.4 0.4	mA
Output Noise Voltage, T_A = 25°C, 10 Hz ≤ f ≤ 100 kHz	V_n	–	60	–	μV
Ripple Rejection (f = 120 Hz)	RR	54	63	–	dB
Dropout Voltage I_O = 500 mA, T_J = 25°C	V_I–V_O	 –	 1.1	 –	Vdc
Average Temperature Coefficient of Output Voltage I_O = 5.0 mA, 0°C ≤ T_J ≤ 125°C	$\Delta V_O/\Delta T$	 –	 0.4	 –	mV/°C

3. Load and line regulation are specified at constant temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.
4. B = T_{low} to T_{high}, −40°C < T_J < 125°C
   C = T_{low} to T_{high}, 0°C < T_J < 125°C

MC79M12B, C
ELECTRICAL CHARACTERISTICS (V_I = −19 V, I_O = 350 mA, T_{low} to T_{high} (Note 6), unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage (T_J = 25°C)	V_O	−11.5	−12	−12.5	Vdc
Line Regulation, T_J = 25°C (Note 5) −14.5 Vdc ≥ V_I ≥ −30 Vdc −15 Vdc ≥ V_I ≥ −25 Vdc	Reg_{line}	 – –	 5.0 3.0	 80 50	mV
Load Regulation, T_J = 25°C (Note 5) 5.0 mA ≤ I_O ≤ 500 mA	Reg_{load}	 –	 30	 240	mV
Output Voltage −14.5 Vdc ≥ V_I ≥ −30 Vdc, 5.0 mA ≤ I_O ≤ 350 mA	V_O	 −11.4	 –	 −12.6	Vdc
Input Bias Current (T_J = 25°C)	I_{IB}	–	4.4	8.0	mA
Input Bias Current Change −14.5 Vdc ≥ V_I ≥ −30 Vdc, I_O = 350 mA 5.0 mA ≤ I_O ≤ 350 mA, V_I = −19 V	ΔI_{IB}	 – –	 – –	 0.4 0.4	mA
Output Noise Voltage, T_A = 25°C, 10 Hz ≤ f ≤ 100 kHz	V_n	–	75	–	μV
Ripple Rejection (f = 120 Hz)	RR	54	60	–	dB
Dropout Voltage I_O = 500 mA, T_J = 25°C	V_I–V_O	 –	 1.1	 –	Vdc
Average Temperature Coefficient of Output Voltage I_O = 5.0 mA, 0°C ≤ T_J ≤ 125°C	$\Delta V_O/\Delta T$	 –	 −0.8	 –	mV/°C

5. Load and line regulation are specified at constant temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.
6. B = T_{low} to T_{high}, −40°C < T_J < 125°C
   C = T_{low} to T_{high}, 0°C < T_J < 125°C

MC79M15B, C
ELECTRICAL CHARACTERISTICS (V_I = −23 V, I_O = 350 mA, T_{low} to T_{high} (Note 8), unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage (T_J = 25°C)	V_O	−14.4	−15	−15.6	Vdc
Line Regulation, T_J = 25°C (Note 7) −17.5 Vdc ≥ V_I ≥ −30 Vdc −18 Vdc ≥ V_I ≥ −28 Vdc	Reg_{line}	 – –	 5.0 3.0	 80 50	mV
Load Regulation, T_J = 25°C (Note 7) 5.0 mA ≤ I_O ≤ 500 mA	Reg_{load}	 –	 30	 240	mV
Output Voltage −17.5 Vdc ≥ V_I ≥ −30 Vdc, 5.0 mA ≤ I_O ≤ 350 mA	V_O	 −14.25	 –	 −15.75	Vdc
Input Bias Current (T_J = 25°C)	I_{IB}	–	4.4	8.0	mA
Input Bias Current Change −17.5 Vdc ≥ V_I ≥ −30 Vdc, I_O = 350 mA 5.0 mA ≤ I_O ≤ 350 mA, V_I = −23 V	ΔI_{IB}	 – –	 – –	 0.4 0.4	mA
Output Noise Voltage, T_A = 25°C, 10 Hz ≤ f ≤ 100 kHz	V_n	–	90	–	μV
Ripple Rejection (f = 120 Hz)	RR	54	60	–	dB
Dropout Voltage I_O = 500 mA, T_J = 25°C	V_I–V_O	 –	 1.1	 –	Vdc
Average Temperature Coefficient of Output Voltage I_O = 5.0 mA, 0°C ≤ T_J ≤ 125°C	$\Delta V_O/\Delta T$	 –	 −1.0	 –	mV/°C

7. Load and line regulation are specified at constant temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.
8. B = T_{low} to T_{high}, −40°C < T_J < 125°C
   C = T_{low} to T_{high}, 0°C < T_J < 125°C

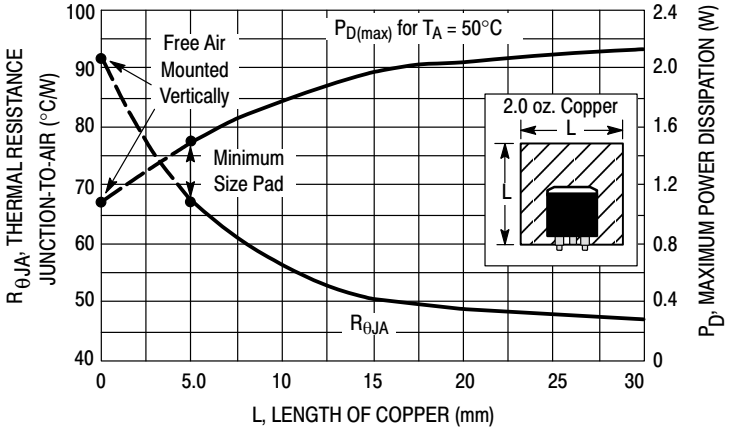


Figure 1. DPAK−3 Thermal Resistance and Maximum Power Dissipation versus P.C.B. Copper Length

Protection Diodes

When external capacitors are used with MC79M00 series regulator it is sometimes necessary to add protection diodes to prevent the capacitors from discharging through low current points into the regulator or from output polarity reversals. Generally, no protection diode is required for values of output capacitance less then 10μF. Figure 2 shows the MC79M15 with the recommended protection diodes.

- Opposite Polarity Protection

Diode D_1 protects the regulator from output polarity reversals during startup, power off and short-circuit operation.

- Reverse-bias Protection

Diode D_2 prevents output capacitor from discharging thru the MC79M15 during an input short circuit or fast switch off of power supply.

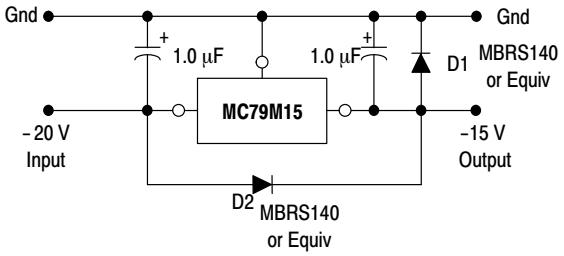


Figure 2. Protection Diodes

ORDERING INFORMATION

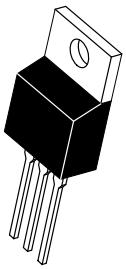
Device	Output Voltage Tolerance	Operating Temperature Range	Package	Shipping†
MC79M05BDT	4.0%	T_J = −40°C to +125°C	DPAK	75 Units / Rail
MC79M05BDTG			DPAK (Pb−Free)	75 Units / Rail
MC79M05BDTRK			DPAK	2500 Units / Reel
MC79M05BDTRKG			DPAK (Pb−Free)	2500 Units / Reel
MC79M05BT			TO−220	50 Units / Rail
MC79M05BTG			TO−220 (Pb−Free)	50 Units / Rail
MC79M05CDT		T_J = 0°C to +125°C	DPAK	75 Units / Rail
MC79M05CDTG			DPAK (Pb−Free)	75 Units / Rail
MC79M05CDTRK			DPAK	2500 Units / Reel
MC79M05CDTRKG			DPAK (Pb−Free)	2500 Units / Reel
MC79M05CT			TO−220	50 Units / Rail
MC79M05CTG			TO−220 (Pb−Free)	50 Units / Rail
MC79M08BDT		T_J = −40°C to +125°C	DPAK	75 Units / Rail
MC79M08BDTRK			DPAK	2500 Units / Reel
MC79M08BDTRKG			DPAK (Pb−Free)	2500 Units / Reel
MC79M08BT			TO−220	50 Units / Rail
MC79M08BTG			TO−220 (Pb−Free)	50 Units / Rail
MC79M08CDT		T_J = 0°C to +125°C	DPAK	75 Units / Rail
MC79M08CDTG			DPAK (Pb−Free)	75 Units / Rail
MC79M08CDTRK			DPAK	2500 Units / Reel
MC79M08CDTRKG			DPAK (Pb−Free)	2500 Units / Reel
MC79M08CT			TO−220	50 Units / Rail
MC79M08CTG			TO−220 (Pb−Free)	50 Units / Rail
MC79M12BDT		T_J = −40°C to +125°C	DPAK	75 Units / Rail
MC79M12BDTG			DPAK (Pb−Free)	75 Units / Rail
MC79M12BDTRK			DPAK	2500 Units / Reel
MC79M12BDTRKG			DPAK (Pb−Free)	2500 Units / Reel
MC79M12BT			TO−220	50 Units / Rail
MC79M12BTG			TO−220 (Pb−Free)	50 Units / Rail
MC79M12CDT		T_J = 0°C to +125°C	DPAK	75 Units / Rail
MC79M12CDTG			DPAK (Pb−Free)	75 Units / Rail
MC79M12CDTRK			DPAK	2500 Units / Reel
MC79M12CDTRKG			DPAK (Pb−Free)	2500 Units / Reel
MC79M12CT			TO−220	50 Units / Rail
MC79M12CTG			TO−220 (Pb−Free)	50 Units / Rail

†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.

ORDERING INFORMATION

Device	Output Voltage Tolerance	Operating Temperature Range	Package	Shipping†
MC79M15BDT	4.0%	T_J = −40°C to +125°C	DPAK	75 Units / Rail
MC79M15BDTG			DPAK (Pb−Free)	75 Units / Rail
MC79M15BDTRK			DPAK	2500 Units / Reel
MC79M15BDTRKG			DPAK (Pb−Free)	2500 Units / Reel
MC79M15BT			TO−220	50 Units / Rail
MC79M15BTG			TO−220 (Pb−Free)	50 Units / Rail
MC79M15CDT		T_J = 0°C to +125°C	DPAK	75 Units / Rail
MC79M15CDTG			DPAK (Pb−Free)	75 Units / Rail
MC79M15CDTRK			DPAK	2500 Units / Reel
MC79M15CDTRKG			DPAK (Pb−Free)	2500 Units / Reel
MC79M15CT			TO−220	50 Units / Rail
MC79M15CTG			TO−220 (Pb−Free)	50 Units / Rail

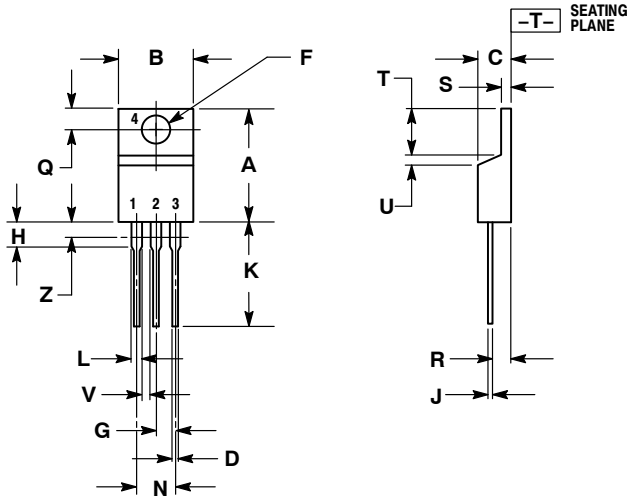
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.



SCALE 1:1

TO−220, SINGLE GAUGE
CASE 221AB−01
ISSUE A

DATE 16 NOV 2010



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCHES.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.
4. PRODUCT SHIPPED PRIOR TO 2008 HAD DIMENSIONS S = 0.045 − 0.055 INCHES (1.143 − 1.397 MM)

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.147	3.61	3.73
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.020	0.024	0.508	0.61
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	---	1.15	---
Z	---	0.080	---	2.04

STYLE 1:
PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 2:
PIN 1. BASE
2. EMITTER
3. COLLECTOR
4. EMITTER

STYLE 3:
PIN 1. CATHODE
2. ANODE
3. GATE
4. ANODE

STYLE 4:
PIN 1. MAIN TERMINAL 1
2. MAIN TERMINAL 2
3. GATE
4. MAIN TERMINAL 2

STYLE 5:
PIN 1. GATE
2. DRAIN
3. SOURCE
4. DRAIN

STYLE 6:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

STYLE 7:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. ANODE

STYLE 8:
PIN 1. CATHODE
2. ANODE
3. EXTERNAL TRIP/DELAY
4. ANODE

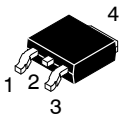
STYLE 9:
PIN 1. GATE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 10:
PIN 1. GATE
2. SOURCE
3. DRAIN
4. SOURCE

STYLE 11:
PIN 1. DRAIN
2. SOURCE
3. GATE
4. SOURCE

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

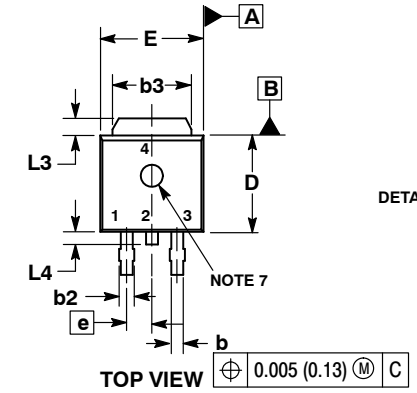
ON Semiconductor®

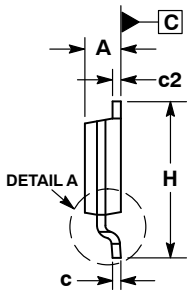


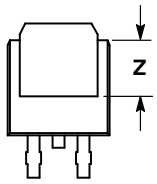
SCALE 1:1

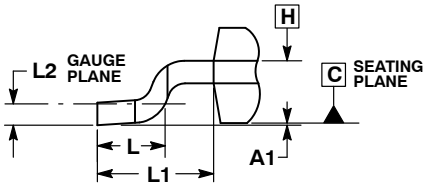
DPAK (SINGLE GAUGE)
CASE 369C
ISSUE F

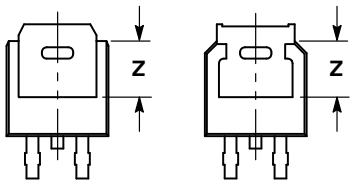
DATE 21 JUL 2015











NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. THERMAL PAD CONTOUR OPTIONAL WITHIN DIMENSIONS b3, L3 and Z.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.006 INCHES PER SIDE.
5. DIMENSIONS D AND E ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY.
6. DATUMS A AND B ARE DETERMINED AT DATUM PLANE H.
7. OPTIONAL MOLD FEATURE.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.086	0.094	2.18	2.38
A1	0.000	0.005	0.00	0.13
b	0.025	0.035	0.63	0.89
b2	0.028	0.045	0.72	1.14
b3	0.180	0.215	4.57	5.46
c	0.018	0.024	0.46	0.61
c2	0.018	0.024	0.46	0.61
D	0.235	0.245	5.97	6.22
E	0.250	0.265	6.35	6.73
e	0.090 BSC		2.29 BSC	
H	0.370	0.410	9.40	10.41
L	0.055	0.070	1.40	1.78
L1	0.114 REF		2.90 REF	
L2	0.020 BSC		0.51 BSC	
L3	0.035	0.050	0.89	1.27
L4	---	0.040	---	1.01
Z	0.155	---	3.93	---

STYLE 1:
PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 2:
PIN 1. GATE
2. DRAIN
3. SOURCE
4. DRAIN

STYLE 3:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

STYLE 4:
PIN 1. CATHODE
2. ANODE
3. GATE
4. ANODE

STYLE 5:
PIN 1. GATE
2. ANODE
3. CATHODE
4. ANODE

STYLE 6:
PIN 1. MT1
2. MT2
3. GATE
4. MT2

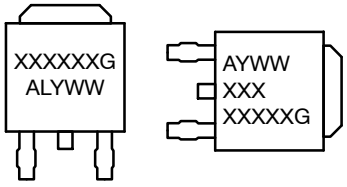
STYLE 7:
PIN 1. GATE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 8:
PIN 1. N/C
2. CATHODE
3. ANODE
4. CATHODE

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. RESISTOR ADJUST
4. CATHODE

STYLE 10:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. ANODE

GENERIC MARKING DIAGRAM*

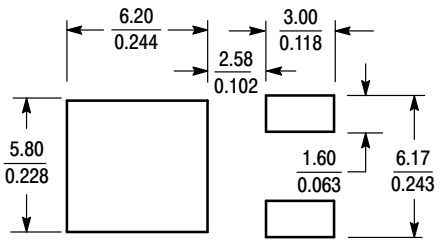


IC Discrete

XXXXXX = Device Code
A = Assembly Location
L = Wafer Lot
Y = Year
WW = Work Week
G = Pb−Free Package

*This information is generic. Please refer to device data sheet for actual part marking.

SOLDERING FOOTPRINT*



SCALE 3:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

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

DOCUMENT NUMBER:	98AON10527D	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	DPAK (SINGLE GAUGE)	PAGE 1 OF 1

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Email Requests to: orderlit@onsemi.com

onsemi Website: www.onsemi.com

TECHNICAL SUPPORT
North American Technical Support:
Voice Mail: 1 800−282−9855 Toll Free USA/Canada
Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:
Phone: 00421 33 790 2910
For additional information, please contact your local Sales Representative

◊

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

onsemi:

MC79M05BDTG MC79M05BDTRKG MC79M05BTG MC79M05CDTG MC79M05CDTRKG MC79M05CTG
MC79M08BDTG MC79M08BDTRKG MC79M08BTG MC79M08CDTG MC79M08CDTRKG MC79M08CTG
MC79M12BDTG MC79M12BDTRKG MC79M12BTG MC79M12CDTG MC79M12CDTRKG MC79M12CTG
MC79M15BDTG MC79M15BDTRKG MC79M15BTG MC79M15CDTG MC79M15CDTRKG MC79M15CTG