

NPN SILICON PLASTIC POWER TRANSISTORS

MJD148

**DPAK (TO-252)
Plastic Package**



PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER

Designed for General Purpose Amplifier and Low Speed Switching Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Emitter Voltage	V_{CEO}	45	V
Collector Base Voltage	V_{CBO}	45	V
Emitter Base Voltage	V_{EBO}	5.0	V
Collector Current Continuous	I_C	4.0	A
Peak		7.0	A
Base Current	I_B	50	mA
Total Power Dissipation at $T_c=25^\circ\text{C}$	P_D	20	W
Derate Above 25°C		0.16	W/ $^\circ\text{C}$
Total Power Dissipation at $T_a=25^\circ\text{C}$	$*P_D$	1.75	W
Derate Above 25°C		0.014	W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 55 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Junction to Case	$R_{th(j-c)}$	6.25	$^\circ\text{C/W}$
Junction to Ambient in free air	$*R_{th(j-a)}$	71.4	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Sustaining Voltage	$**V_{CEO(sus)}$	$I_C=100\text{mA}, I_B=0$	45			V
Collector Cut Off Current	I_{CBO}	$V_{CB}=45\text{V}, I_E=0$			20	μA
Emitter Cut Off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			1.0	mA
DC Current Gain	$**h_{FE}$	$I_C=10\text{mA}, V_{CE}=5\text{V}$ $I_C=0.5\text{A}, V_{CE}=1\text{V}$ $I_C=2\text{A}, V_{CE}=1\text{V}$ $I_C=3\text{A}, V_{CE}=1\text{V}$	40 85 50 30		375	

*These rating are applicable when surface mounted on the minimum pad sizes recommended

**Pulse Test:- Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

MJD148Rev010206E

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ELECTRICAL CHARACTERISTICS (T_c=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Saturation Voltage	**V _{CE(sat)}	I _C =2A, I _B =0.2A			0.5	V
Base Emitter On Voltage	**V _{BE(on)}	I _C =2A, V _{CE} =1V			1.1	V

DYNAMIC CHARACTERISTICS

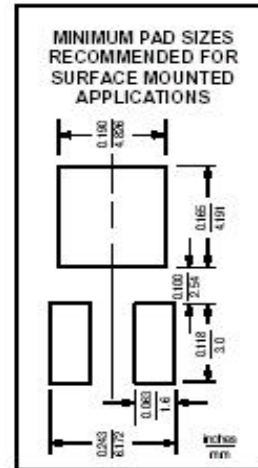
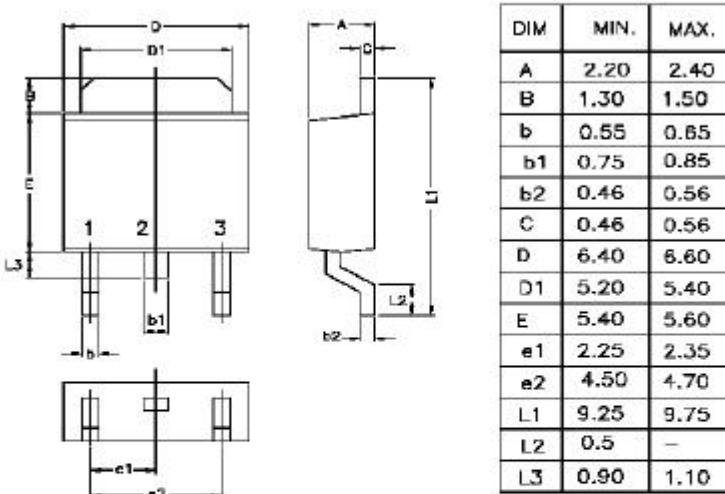
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Current Gain Bandwidth Product	f _T	I _C =250mA, V _{CE} =1V, f=1MHz	3			MHz

MARKING	CDIL	
XY= Date Code	MJD148 XY MX	

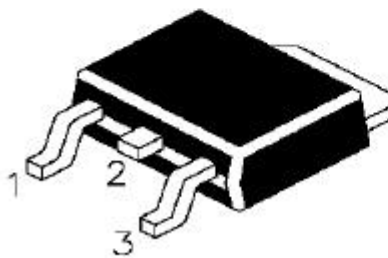
**Pulse Test:- Pulse Width ≤ 300ms, Duty Cycle ≤ 2%

MJD148Rev010206E

DPAK PACKAGE OUTLINE DIMENSIONS



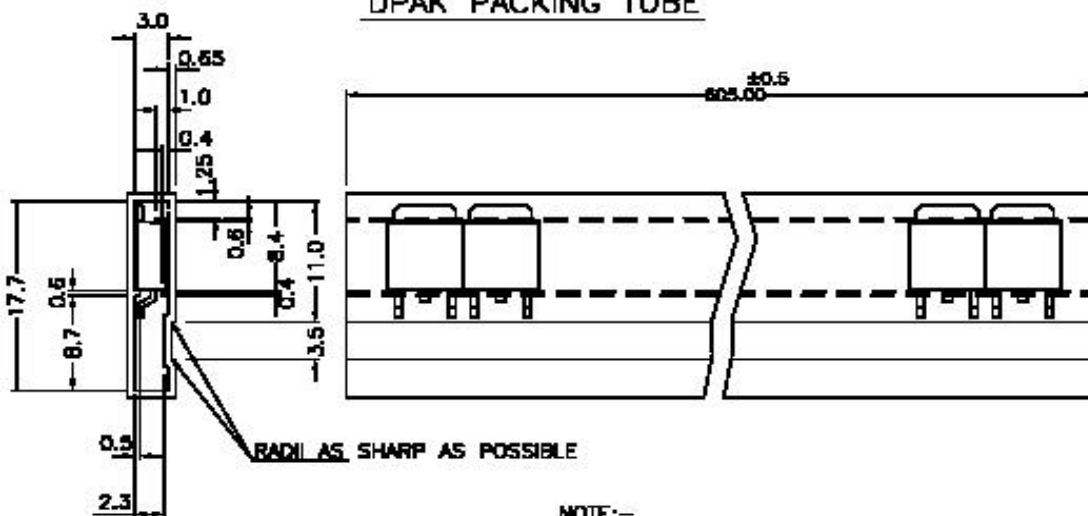
ALL DIMENSIONS ARE IN mm



PIN CONFIGURATION

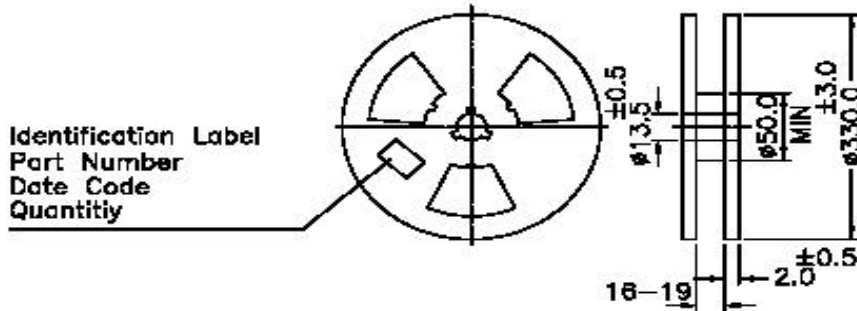
1. BASE
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DPAK PACKING TUBE



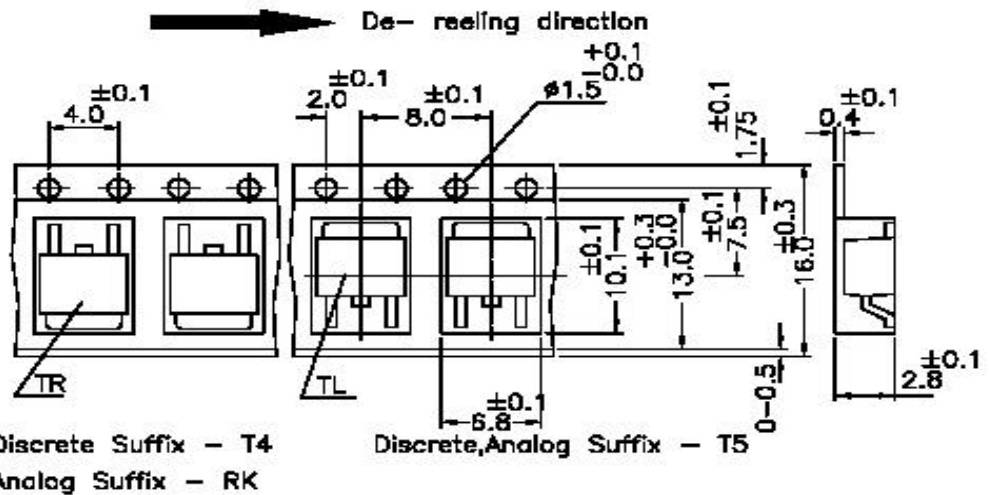
NOTE:—
80 Pcs/TUBE
2.5 K/REEL
ALL DIMENSIONS ARE IN mm

DPAK TAPE & REEL SPECIFICATION



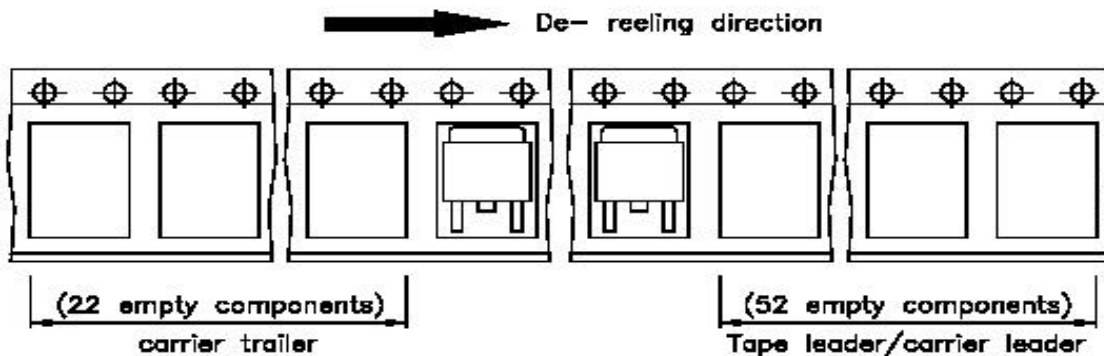
ALL DIMENSIONS ARE IN mm
REEL ϕ 330 mm (13")
No of Device 2500

TAPE & REEL



Notes:-

A maximum of three consecutive components may be missing. Provided this gap is followed by six consecutive components.



Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-2579 6150, 4141 1112 Fax + 91-11-2579 5290, 4141 1119

email@cdil.com www.cdilsemi.com