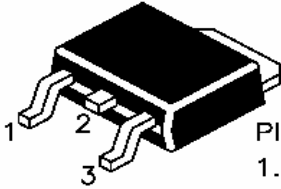


**COMPLEMENTARY DARLINGTON PLASTIC POWER TRANSISTORS**

**MJD112 NPN  
MJD117 PNP**

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



**PIN CONFIGURATION**

- 1. BASE
- 2. COLLECTOR
- 3. EMITTER

Designed for General Purpose Power and Switching Applications

**ABSOLUTE MAXIMUM RATINGS**

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Base Voltage	$V_{CBO}$	100	V
Collector Emitter Voltage	$V_{CEO}$	100	V
Emitter Base Voltage	$V_{EBO}$	5	V
Collector Current Continuous	$I_C$	2	A
Peak		4	A
Base Current	$I_B$	50	mA
Total Power Dissipation $T_c=25^\circ\text{C}$	$P_D$	20	W
Derate Above $25^\circ\text{C}$		0.16	W/ $^\circ\text{C}$
Total Power Dissipation $T_a=25^\circ\text{C}$	$P_D$	1.75	W
Derate Above $25^\circ\text{C}$		0.014	W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	- 65 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	** $V_{CEO(sus)}$	$I_C=30\text{mA}, I_B=0$	100			V
Collector Cut Off Current	$I_{CEO}$	$V_{CE}=50\text{V}, I_B=0$			20	$\mu\text{A}$
Collector Cut Off Current	$I_{CBO}$	$V_{CB}=100\text{V}, I_E=0$ $V_{CB}=80\text{V}, I_E=0$			20 10	$\mu\text{A}$
Emitter Cut Off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			2.0	mA
Collector Cut Off Current	$I_{CEX}$	$V_{CE}=80\text{V}, V_{BE(off)}=1.5\text{V}$ $V_{CE}=80\text{V}, V_{BE(off)}=1.5\text{V},$ $T_c=125^\circ\text{C}$			10 500	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$I_C=0.5\text{A}, V_{CE}=3\text{V}$ $I_C=2\text{A}, V_{CE}=3\text{V}$ $I_C=4\text{A}, V_{CE}=3\text{V}$	500 1000 200		12000	

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

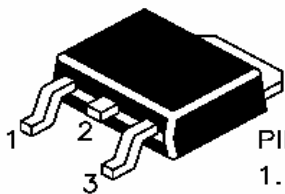
\*\*Pulse Test:- Pulse Width < 300ms, Duty Cycle < 2%

MJD112\_117 Rev220904E

**COMPLEMENTARY DARLINGTON PLASTIC POWER TRANSISTORS**

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**PIN CONFIGURATION**

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**ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2A, I_B=8mA$			2.0	V
		$I_C=4A, I_B=40mA$			3.0	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=4A, I_B=40mA$			4.0	V
Base Emitter On Voltage	$V_{BE(on)}$	$I_C=2A, V_{CE}=3V$			2.8	V

**DYNAMIC CHARACTERISTICS**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Current Gain Bandwidth Product	$f_T$	$I_C=0.75A, V_{CE}=10V, f=1MHz$	25			MHz
Output Capacitance	$C_{ob}$	$I_E=0, V_{CB}=10V, f=0.1MHz$ <b>MJD112</b> <b>MJD117</b>			100	pF
					200	pF

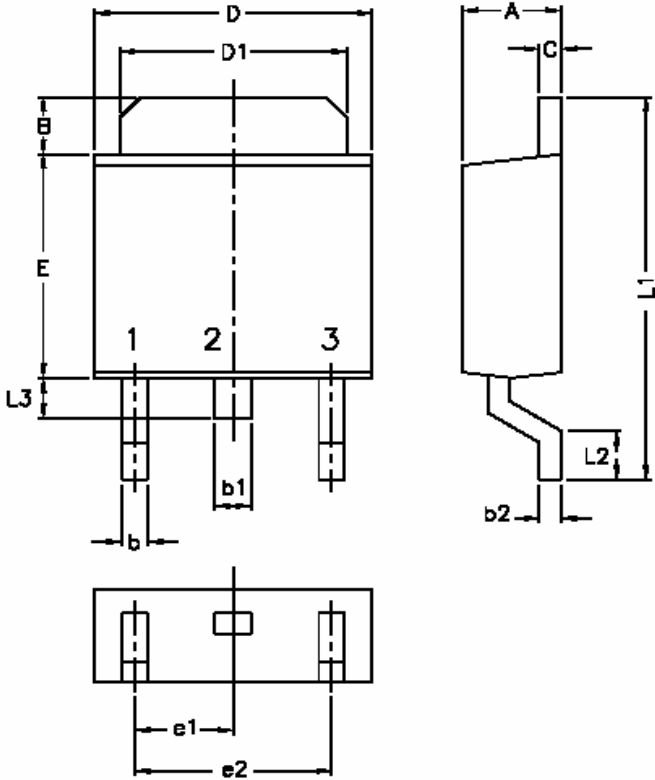
MARKING	CDIL	CDIL
	<b>MJD112</b>	<b>MJD117</b>
<b>XY= Date Code</b>	<b>XY MX</b>	<b>XY MX</b>

MJD112\_117 Rev220904E

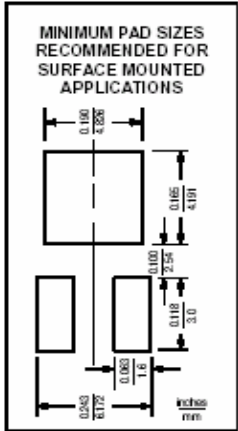
MJD112 NPN  
MJD117 PNP

DPAK (TO-252)  
Plastic Package

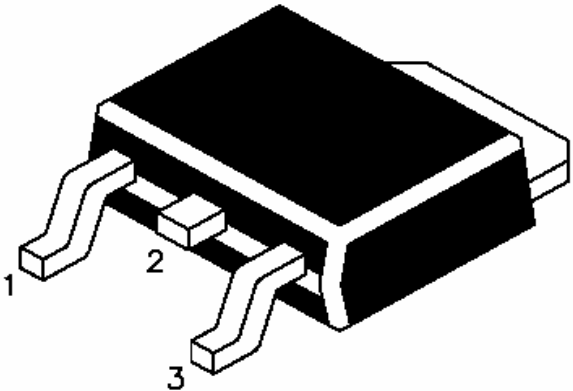
# PACKAGE DPAK



DIM	MIN.	MAX.
A	2.18	2.43
B	0.889	1.50
b	0.550	0.889
b1	0.75	0.85
b2	0.46	0.56
C	0.46	0.56
D	6.35	6.75
D1	4.95	5.46
E	5.40	6.22
e1	2.25	2.35
e2	4.50	4.70
L1	9.25	9.75
L2	0.5	-
L3	0.90	1.10



ALL DIMENSIONS ARE IN mm



## PIN CONFIGURATION

- 1. BASE
- 2. COLLECTOR
- 3. EMITTER

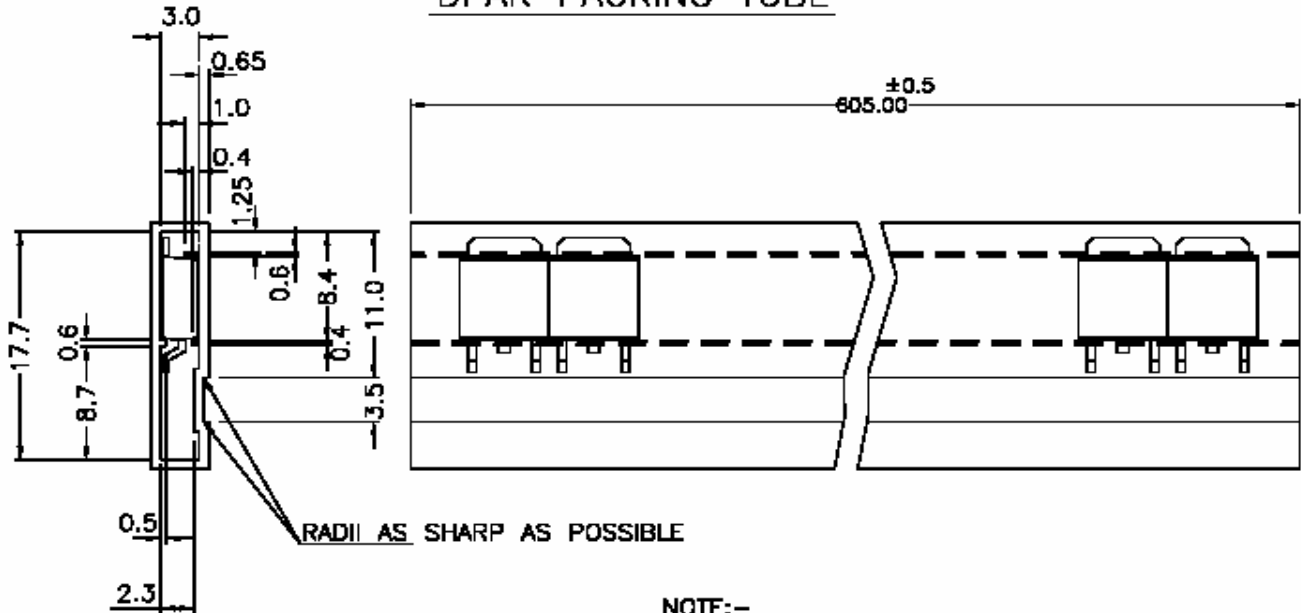
MJD112 NPN

MJD117 PNP

DPAK (TO-252)

Plastic Package

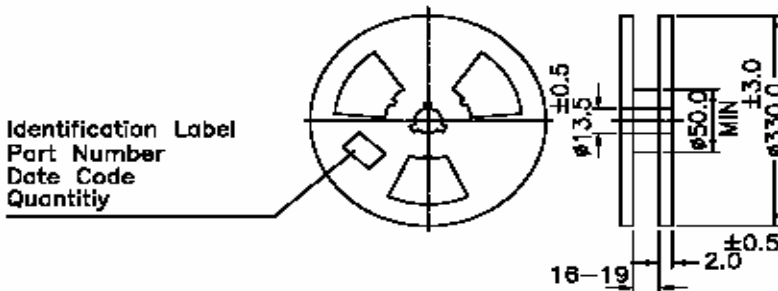
DPAK PACKING TUBE



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

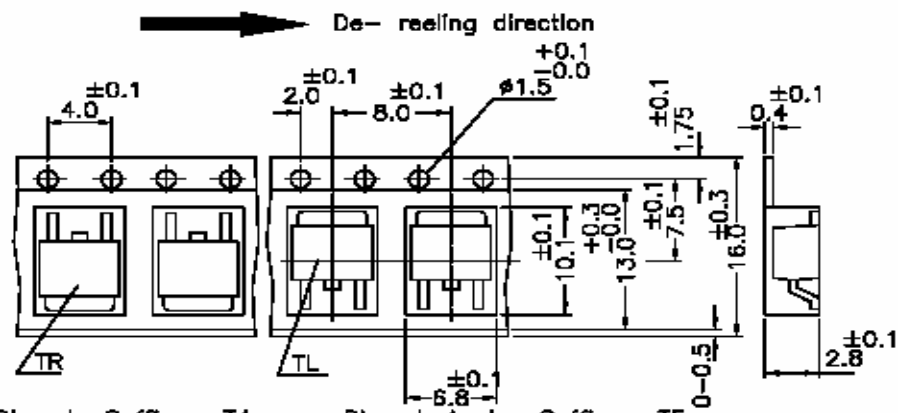
MJD112\_117 Rev220904E

# DPAK TAPE & REEL SPECIFICATION



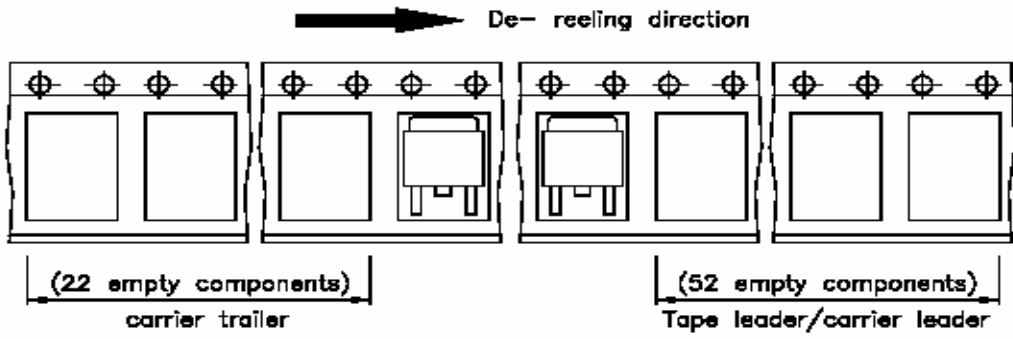
ALL DIMENSIONS ARE IN mm  
REEL  $\phi$  330 mm (13")  
No of Device 2500

## TAPE & REEL



Discrete Suffix - T4  
Analog Suffix - RK  
Discrete, Analog Suffix - T5

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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