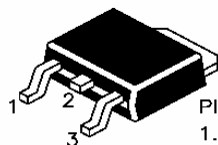


NPN DARLINGTON PLASTIC POWER TRANSISTOR

MJD44E3

DPAK (TO-252)
Plastic Package



PIN CONFIGURATION

1. BASE
2. COLLECTOR
3. EMITTER

For General Purpose Power and Switching Output or Driver Stages in Applications such as Switching Regulators, Converters and Power Amplifiers

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Emitter Voltage	V_{CEO}	80	V
Emitter Base Voltage	V_{EBO}	7.0	V
Collector Current Continuous	I_C	10	A
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

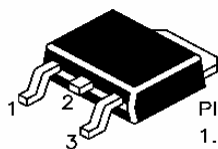
Junction to Case	$R_{th(j-c)}$	6.25	$^\circ\text{C/W}$
Junction to Ambient in free air	$*R_{th(j-a)}$	71.4	$^\circ\text{C/W}$
Lead Temperature for Soldering	T_L	260	$^\circ\text{C}$

*These ratings are applicable when surface mounted on the minimum pad sizes recommended. (see page 3)

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Cut Off Current	I_{CES}	$V_{CE}=\text{Rated } V_{CEO}, V_{BE}=0$			10	μA
Emitter Cut Off Current	I_{EBO}	$V_{EB}=7V, I_C=0$			8.0	mA
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5A, I_B=10mA$			1.5	V
		$I_C=10A, I_B=20mA$			2.0	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=5A, I_B=10mA$			2.5	V
DC Current Gain	h_{FE}	$I_C=5A, V_{CE}=5V$	1000			

MJD44E3 Rev_1 180607E



PIN CONFIGURATION

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

DYNAMIC CHARACTERISTICS

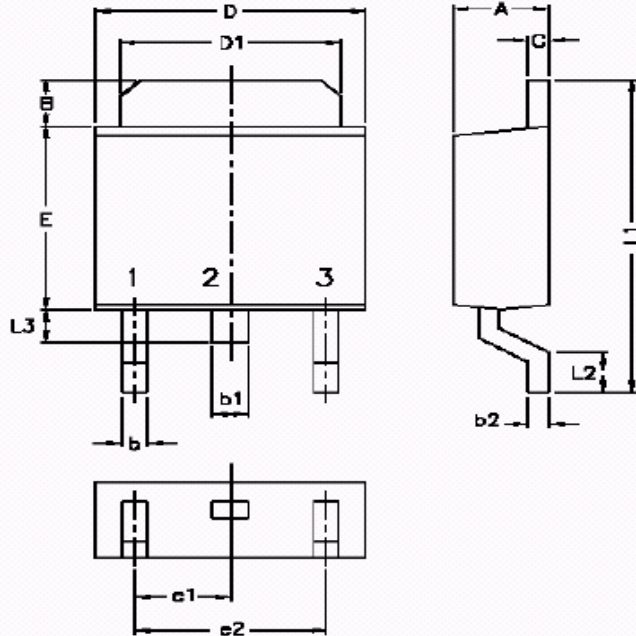
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Capacitance	C_{cb}	$I_E=0$, $V_{CB}=10\text{V}$, $f=1\text{MHz}$			130	pF

SWITCHING TIMES

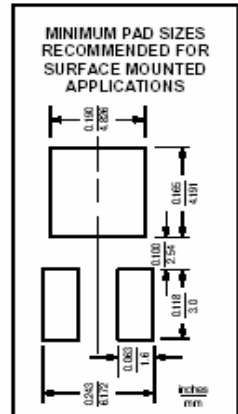
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Delay and Rise Time	$t_d + t_r$	$I_C=10\text{A}$, $I_{B1}=20\text{mA}$		0.6		μs
Storage Time	t_s	$I_C=10\text{A}$, $I_{B1}=I_{B2}=20\text{mA}$		2.0		μs
Fall Time	t_f	$I_C=10\text{A}$, $I_{B1}=I_{B2}=20\text{mA}$		0.5		μs

MARKING	CDIL MJD44E3 XY MX	
XY= Date Code		

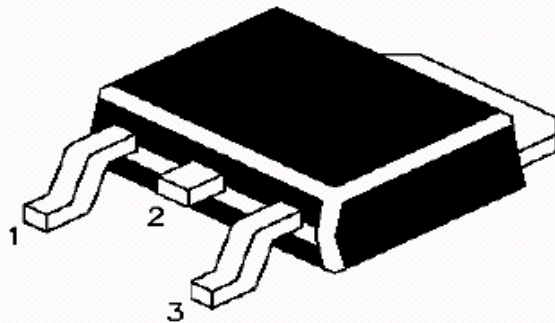
PACKAGE DPAK



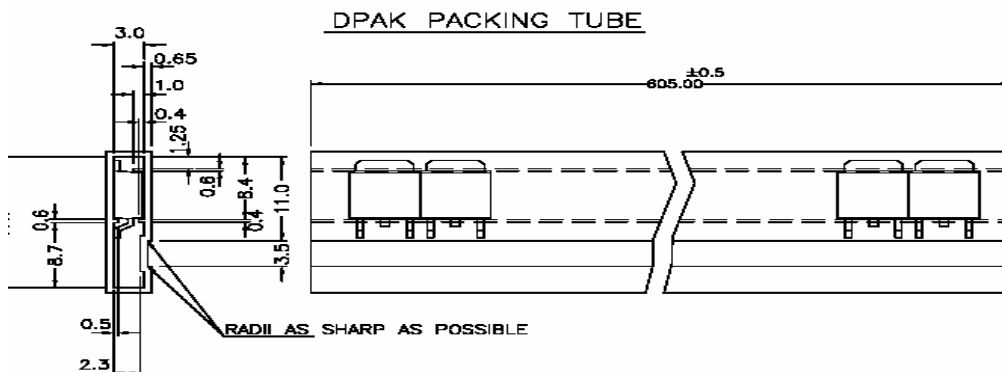
DIM	MIN.	MAX.
A	2.18	2.43
B	0.889	1.50
b	0.550	0.889
b1	0.75	0.85
b2	0.46	0.56
C	0.46	0.56
D	6.35	6.75
D1	4.95	5.46
E	5.40	6.22
e1	2.25	2.35
e2	4.50	4.70
L1	9.25	9.75
L2	0.5	—
L3	0.90	1.10



ALL DIMENSIONS ARE IN mm

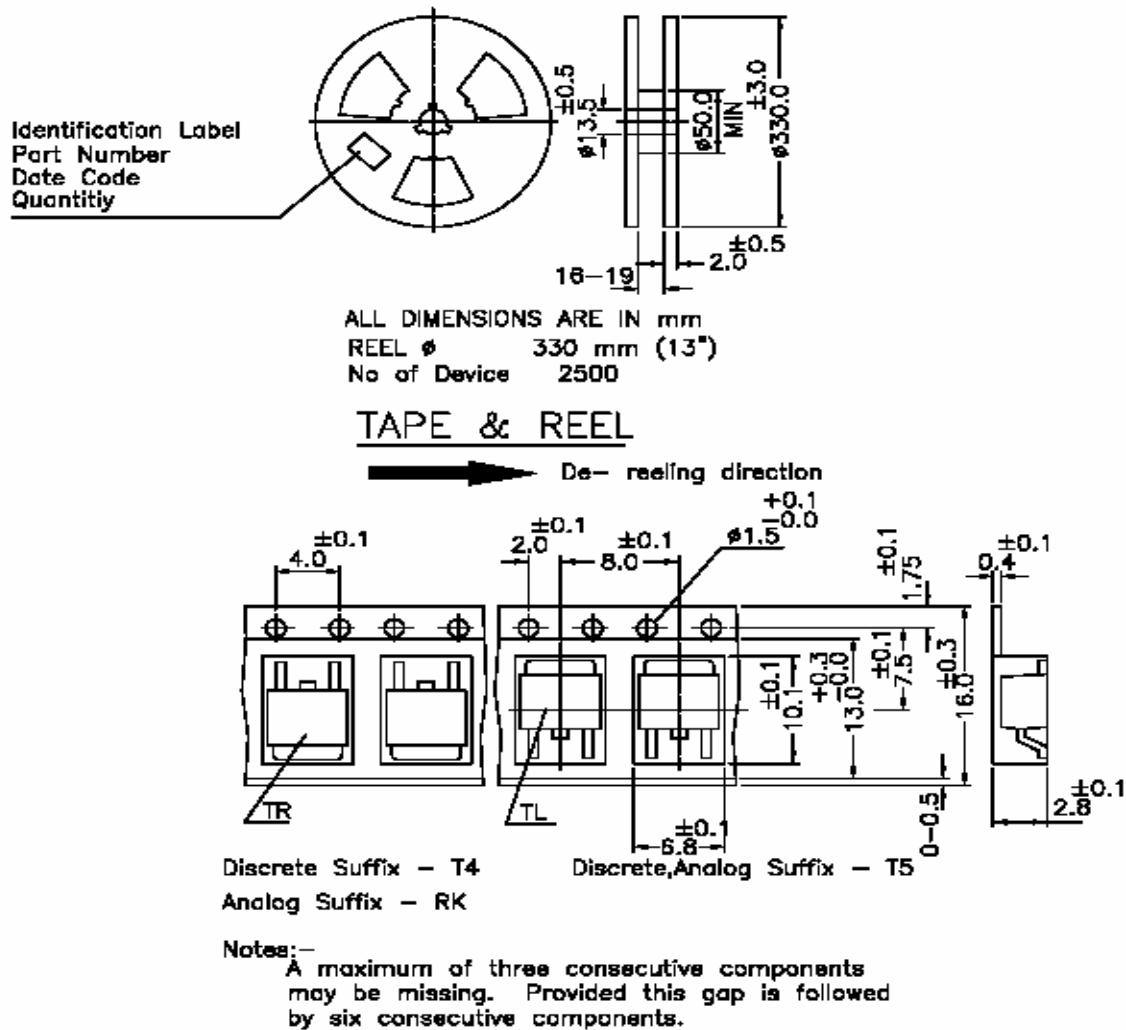
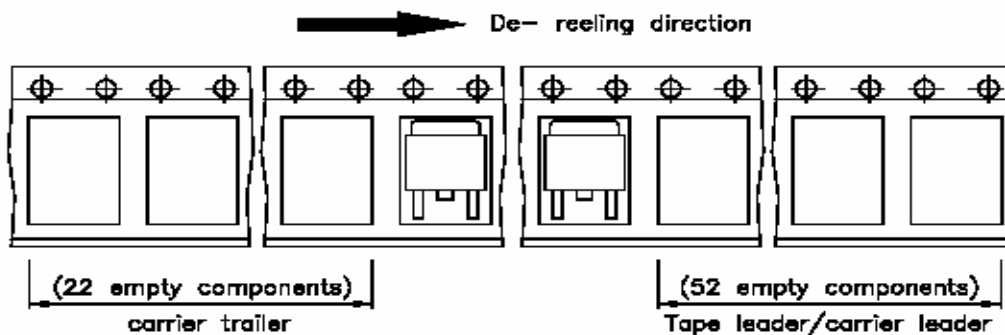


PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER



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

DPAK TAPE & REEL SPECIFICATION



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