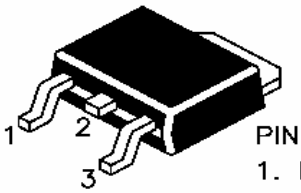
# COMPLEMENTARY DARLINGTON PLASTIC POWER TRANSISTORS

**CJD110 NPN**
**CJD115 PNP**

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




PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER

**Designed for General Purpose Power and Switching such as Output or Driver stages in Applications such as Switching Regulators, Converters and Power Amplifiers**

**ABSOLUTE MAXIMUM RATINGS**

| DESCRIPTION | SYMBOL | VALUE | UNIT |
|---|---|---|---|
| Collector Base Voltage | $V_{CBO}$ | 60 | V |
| Collector Emitter Voltage | $V_{CEO}$ | 60 | V |
| Emitter Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current Continuous<br>Peak | $I_C$ | 2<br>4 | A<br>A |
| Base Current | $I_B$ | 50 | mA |
| Total Power Dissipation $T_c$=25ºC<br>Derate Above 25ºC | $P_D$ | 20<br>0.16 | W<br>W/ºC |
| Total Power Dissipation $T_a$=25ºC<br>Derate Above 25ºC | $P_D$ | 1.75<br>0.014 | W<br>W/ºC |
| Operating and Storage Junction Temperature Range | $T_j$, $T_{stg}$ | - 65 to +150 | ºC |

**THERMAL CHARACTERISTICS**

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

**ELECTRICAL CHARACTERISTICS ($T_c$=25ºC unless specified otherwise)**

| DESCRIPTION | SYMBOL | TEST CONDITION | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector Emitter Sustaining Voltage | **$V_{CEO(sus)}$ | $I_C$=30mA, $I_B$=0 | 100 | | | V |
| Collector Cut Off Current | $I_{CEO}$ | $V_{CE}$=30V, $I_B$=0 | | | 20 | µA |
| Collector Cut Off Current | $I_{CBO}$ | $V_{CB}$=60V, $I_E$=0<br>$V_{CB}$=40V, $I_E$=0 | | | 20<br>10 | µA<br>µA |
| Emitter Cut Off Current | $I_{EBO}$ | $V_{EB}$=5V, $I_C$=0 | | | 2.0 | mA |
| Collector Cut Off Current | $I_{CEX}$ | $V_{CE}$=40V, $V_{BE\ (off)}$=1.5V | | | 10 | µA |
| | | $V_{CE}$=40V, $V_{BE\ (off)}$=1.5V, $T_c$=125ºC | | | 500 | µA |
| DC Current Gain | $h_{FE}$ | $I_C$=0.5A, $V_{CE}$=3V<br>$I_C$=2A, $V_{CE}$=3V<br>$I_C$=4A, $V_{CE}$=3V | 500<br>1000<br>200 | | 12000 | |

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

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

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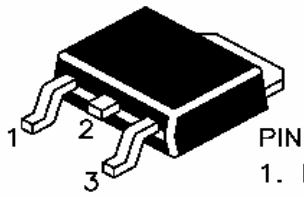


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**ELECTRICAL CHARACTERISTICS ($T_c$=25ºC unless specified otherwise)**

| 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 | | | | |
| | | **CJD110** | | | 100 | pF |
| | | **CJD115** | | | 200 | pF |

| **MARKING** | **CDIL** | **CDIL** |
|---|---|---|
| | **CJD110** | **CJD115** |
| | **XY MX** | **XY MX** |
| **XY= Date Code** | | |

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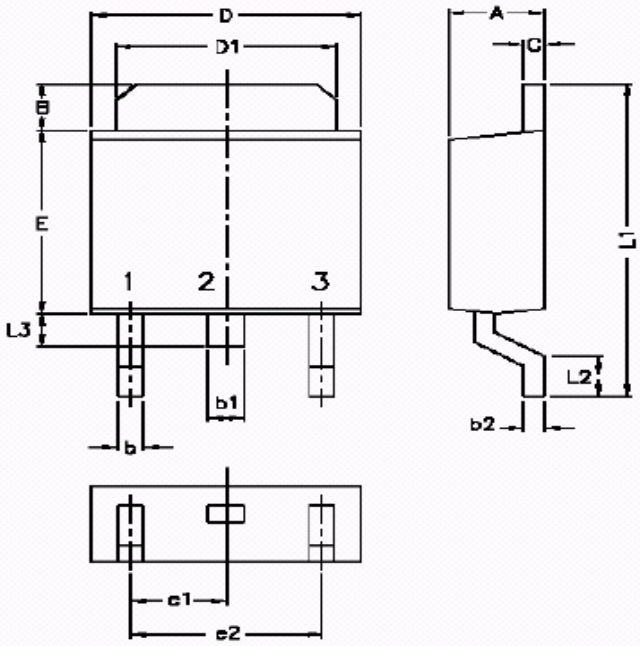
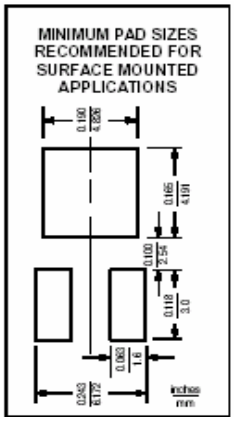
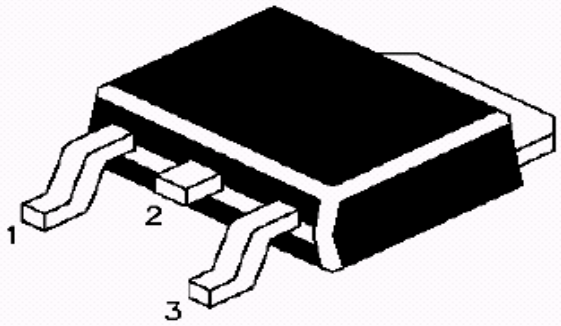
# PACKAGE DPAK




| 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

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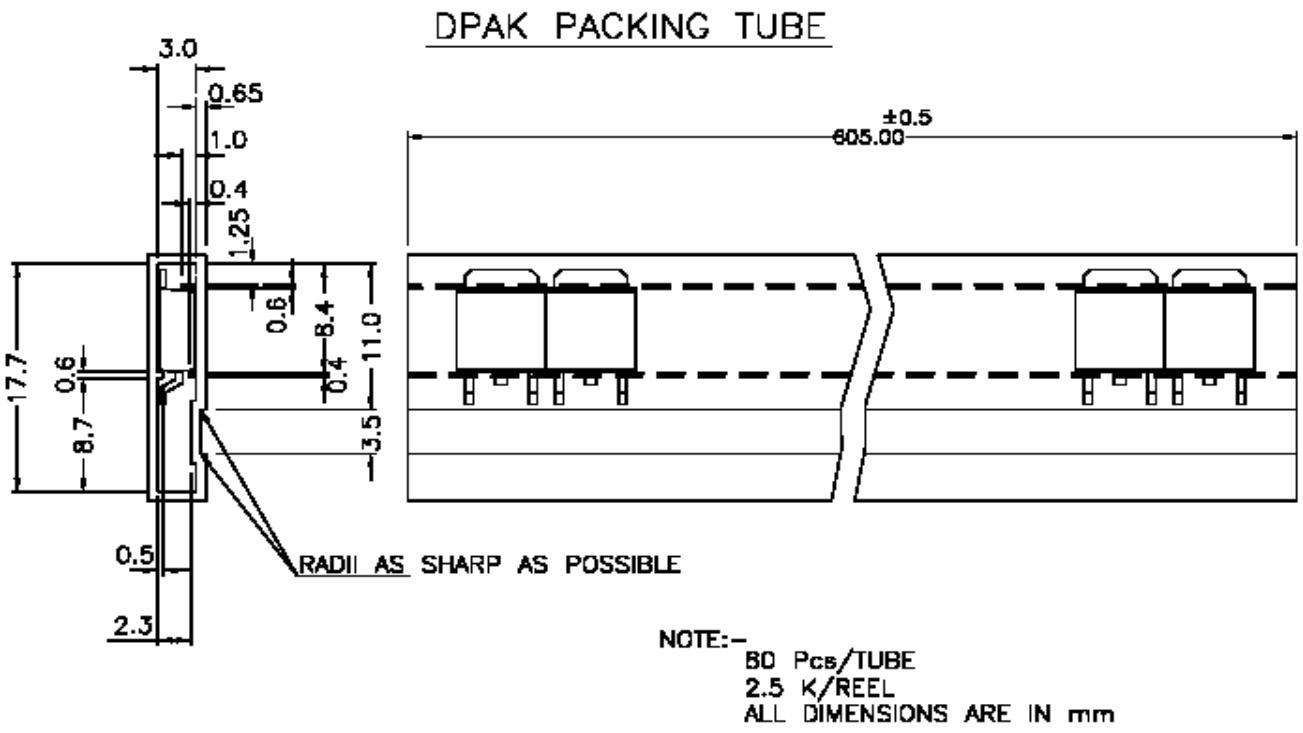


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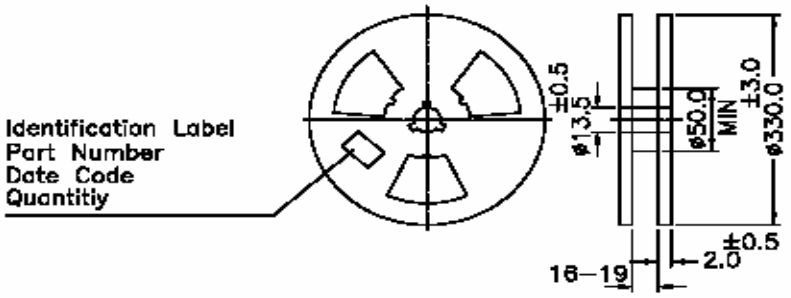
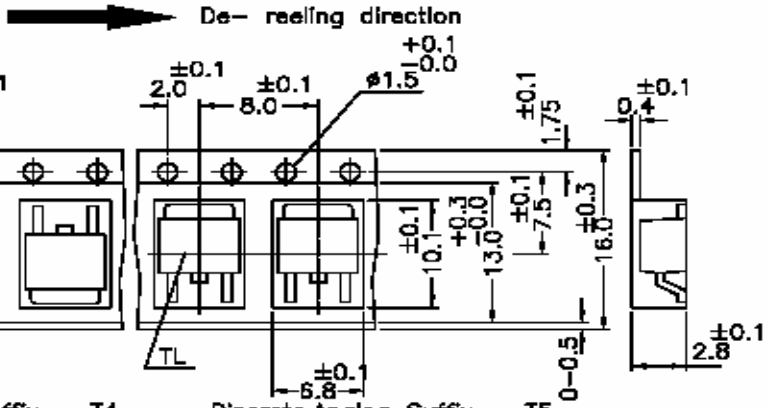
# DPAK TAPE & REEL SPECIFICATION




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

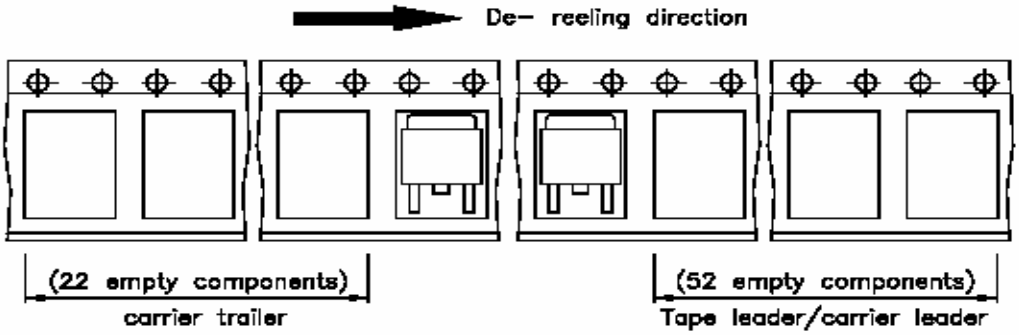
## TAPE & REEL




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.

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## 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



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