

8.0 AMPERE
NPN SILICON
DARLINGTON
POWER TRANSISTOR

1400 VOLTS
80 WATTS

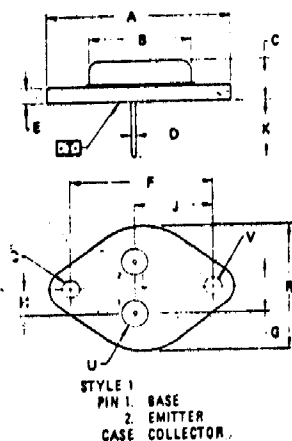
MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--------------------------------------------------|----------------|-------------|---------------|
| Collector-Emitter Voltage | V_{CEX} | 1400 | Vdc |
| Emitter Base Voltage | V_{EB} | 5.0 | Vdc |
| Collector Current - Continuous | I_C | 8.0 | Adc |
| Peak (1) | I_{CM} | 16 | |
| Base Current - Continuous | I_B | 2.0 | Adc |
| Peak (1) | I_{BM} | 4.0 | |
| Emitter Current - Continuous | I_E | 10 | Adc |
| Peak (1) | I_{EM} | 20 | |
| Total Power Dissipation @ $T_C = 25^\circ C$ | P_D | 80 | Watts |
| Derate above $25^\circ C$ | | 0.6 | W/ $^\circ C$ |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | -65 to +150 | $^\circ C$ |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|----------------------------------------------------------------------------------|-----------------|------|--------------|
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 1.56 | $^\circ C/W$ |
| Maximum Lead Temperature for Soldering Purposes: 1.8" from Case for 5 Seconds | T_L | 275 | $^\circ C$ |

(1) Pulse Test: Pulse Width = 1.0 ms. Duty Cycle $\leq 10\%$.



- NOTES:
- DIMENSIONS Q AND V ARE DATUMS.
 - \square IS SEATING PLANE AND DATUM.
 - POSITIONAL TOLERANCE FOR MOUNTING HOLE Q

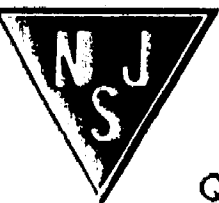
$\phi .13 (0.005) \text{ } \ominus \text{ } T \text{ } V \text{ } \ominus$

FOR LEADS

$\phi .13 (0.005) \text{ } \ominus \text{ } T \text{ } V \text{ } \ominus \text{ } Q \text{ } \ominus$

- DIMENSIONS AND TOLERANCES PER ANSI Y14.5, 1973.

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|-----------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | - | 39.37 | - | 1.550 |
| B | - | 21.08 | - | 0.830 |
| C | 6.35 | 7.62 | 0.250 | 0.300 |
| D | 0.87 | 1.09 | 0.038 | 0.043 |
| E | 1.40 | 1.78 | 0.055 | 0.070 |
| F | 30.15 BSC | 1.187 BSC | | |
| G | 10.92 BSC | 0.430 BSC | | |
| H | 8.48 BSC | 0.334 BSC | | |
| J | 16.80 BSC | 0.661 BSC | | |
| K | 11.18 | 12.19 | 0.440 | 0.480 |
| O | 3.81 | 4.19 | 0.150 | 0.165 |
| R | - | 28.87 | - | 1.136 |
| U | 4.83 | 5.33 | 0.190 | 0.210 |
| V | 3.81 | 4.19 | 0.150 | 0.165 |



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ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ$ unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

OFF CHARACTERISTICS (1)

| | | | | | |
|----------------------------------------------------------------------------------|---------------|-----|---|------|------|
| Collector-Emitter Sustaining Voltage ($I_C = 100 \text{ mAdc}$, $I_B = 0$) | $V_{CE(sus)}$ | 700 | — | — | Vdc |
| Collector Cutoff Current ($V_{CE} = 1400 \text{ Vdc}$, $V_{BE} = 0$) | I_{CES} | — | — | 0.25 | mAdc |
| Emitter Cutoff Current ($V_{BE} = 4.0 \text{ Vdc}$, $I_C = 0$) | I_{EBO} | — | — | 50 | mAdc |

ON CHARACTERISTICS (1)

| | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|-----|------------|-----|
| Collector-Emitter Saturation Voltage ($I_C = 3.5 \text{ Adc}$, $I_B = 0.15 \text{ Adc}$) ($I_C = 4.0 \text{ Adc}$, $I_B = 0.2 \text{ Adc}$) | $V_{CE(sat)}$ | — | — | 3.0 3.0 | Vdc |
| Base-Emitter Saturation Voltage ($I_C = 3.5 \text{ Adc}$, $I_B = 0.15 \text{ Adc}$) ($I_C = 4.0 \text{ Adc}$, $I_B = 0.2 \text{ Adc}$) | $V_{BE(sat)}$ | — | — | 2.0 2.0 | Vdc |
| Forward Diode Voltage ($I_F = 4.0 \text{ Adc}$) | V_f | — | 1.2 | 2.0 | Vdc |
| Second Breakdown Collector Current with Base Forward Biased | $I_{S/b}$ | See Figure 1 | | | |

SWITCHING CHARACTERISTICS

| | | | | | |
|--------------------------------------------------------------------------------------|-------|---|------|-----|---------------|
| Fall Time (See Figure 2) ($I_C = 4.0 \text{ Adc}$, $I_{B1} = 0.2 \text{ Adc}$) | t_f | — | 0.65 | 1.0 | μs |
|--------------------------------------------------------------------------------------|-------|---|------|-----|---------------|

(1) Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle = 2%.