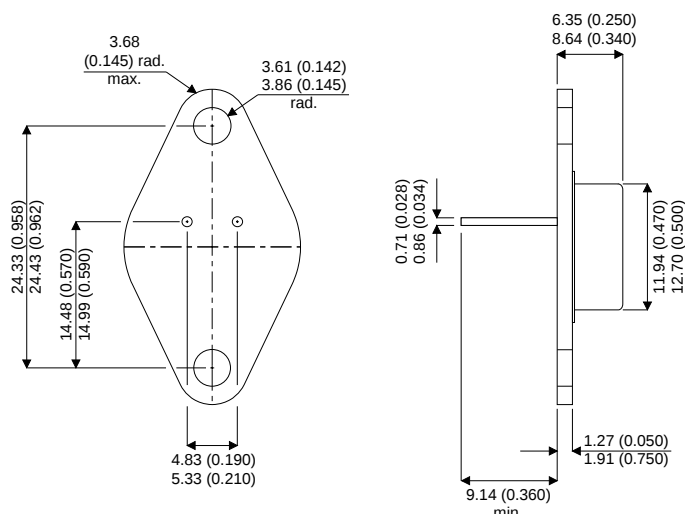


MECHANICAL DATA

Dimensions in mm(inches)



TO-66

PIN 1 — Base PIN 2 — Emitter Case is Collector.

DARLINGTON COMPLEMENTARY SILICON POWER TRANSISTOR

FEATURES

- $LOW V_{CE(SAT)}$
- HIGH CURRENT

APPLICATIONS

- GENERAL PURPOSE AMPLIFIER
- LOW FREQUENCY SWITCHING
- HAMMER DRIVER APPLICATIONS

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

V_{CEO}	Collector – Emitter Voltage	80V
V_{CB}	Collector – Base Voltage	80V
V_{EB}	Emitter – Base Voltage	5V
I_C	Collector Current – Continuous	4A
	Peak	8A
I_B	Base Current	80mA
P_D	Total Power Dissipation at $T_{case} = 25^{\circ}C$	50W
	Derate above $25^{\circ}C$	0.286 W/ $^{\circ}C$
T_j, T_{stg}	Operating and Storage Junction Temperature Range	-65 to $200^{\circ}C$

THERMAL CHARACTERISTICS

$R_{\theta JC}$	Thermal Resistance, Junction to Case	3.5 $^{\circ}C/W$
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ELECTRICAL CHARACTERISTICS ($T_{\text{case}} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
$V_{\text{CEO(sus)}}$ Collector - Emitter Sustaining Voltage	$I_{\text{C}} = 50\text{mA}$ $I_{\text{B}} = 0$	80			V
I_{CEO} Collector Cut-off Current	$I_{\text{B}} = 0$ $V_{\text{CE}} = 40\text{V}$	0.5			mA
I_{CEX} Collector – Emitter Cut-off Current	$V_{\text{CE}} = \text{Rated } V_{\text{CB}}$ $V_{\text{EB(off)}} = 1.5\text{V}$ $T_{\text{c}} = 150^{\circ}\text{C}$			0.5 5.0	mA
I_{EBO} Emitter Cut-off Current	$I_{\text{C}} = 0$ $V_{\text{BE}} = 5\text{V}$			2.0	mA
ON CHARACTERISTICS					
h_{FE} DC Current Gain	$I_{\text{C}} = 2\text{A}$ $V_{\text{CE}} = 3\text{V}$	750		18000	—
	$I_{\text{C}} = 4\text{A}$ $V_{\text{CE}} = 3\text{V}$	100			
$V_{\text{CE(sat)}}$ Collector – Emitter Saturation Voltage	$I_{\text{C}} = 2\text{A}$ $I_{\text{B}} = 8.0\text{mA}$			2.0	V
	$I_{\text{C}} = 4\text{A}$ $I_{\text{B}} = 40\text{mA}$			3.0	
$V_{\text{BE(sat)}}$ Base – Emitter Saturation Voltage	$I_{\text{C}} = 4\text{A}$ $I_{\text{B}} = 40\text{mA}$			4.0	V
$V_{\text{BE(on)}}$ Base – Emitter On Voltage	$I_{\text{C}} = 2\text{A}$ $V_{\text{CE}} = 3\text{V}$			2.8	V
DYNAMIC CHARACTERISTICS					
$ h_{\text{fe}} $ Magnitude of Common Emitter Small Signal Short Circuit Forward current Transfer Ratio	$I_{\text{C}} = 1.5\text{A}$ $V_{\text{CE}} = 3\text{V}$ $f = 1.0\text{ MHz}$	4.0			—
C_{ob} Output Capacitance	$V_{\text{CB}} = 10\text{V}$ $I_{\text{E}} = 0$ $f = 0.1\text{ MHz}$			120	pF
h_{fe} Small Signal Current Gain	$I_{\text{C}} = 1.5\text{A}$ $V_{\text{CE}} = 3.0\text{V}$ $f = 1.0\text{ KHz}$	300			—

*Pulse test $t_{\text{p}} = 300\mu\text{s}$ $\delta \leq 2\%$