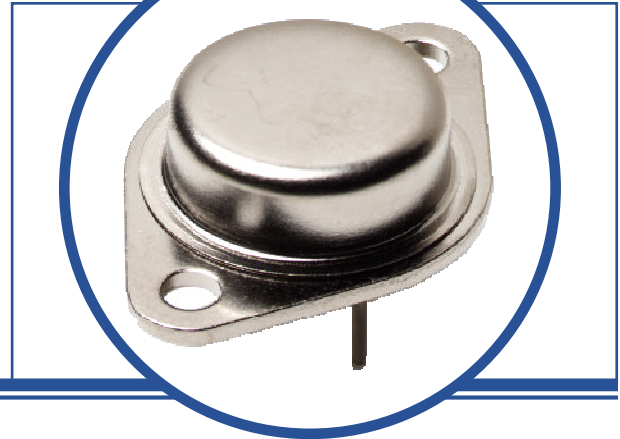


SILICON NPN DARLINGTON POWER TRANSISTOR

2N6384

- Hermetic TO3 Metal package.
- Screening Options Available.



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

V_{CEO}	Collector – Emitter Voltage	60V
V_{CBO}	Collector – Base Voltage	60V
V_{EBO}	Emitter – Base Voltage	5V
I_B	Base Current	0.25A
I_C	Continuous Collector Current	10A
I_B	Base Current	
P_T	Total Power Dissipation at $T_A = 25^\circ\text{C}$	6W
	Derate Above 25°C	34.2mW/ $^\circ\text{C}$
P_T	Total Power Dissipation at $T_C = 25^\circ\text{C}$	100W
	Derate Above 25°C	571mW/ $^\circ\text{C}$
T_J	Junction Temperature Range	-55 to +175 $^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55 to +175 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	1.75	$^\circ\text{C/W}$

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

SILICON NPN DARLINGTON POWER TRANSISTOR 2N6384

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 200\text{mA}$	60			V
$V_{(BR)CER}^{(1)}$		$I_C = 200\text{mA}$ $R_{BE} = 100\Omega$	60			
I_{CBO}	Collector-Base Cut-Off Current	$V_{CE} = 60\text{V}$			1.0	mA
I_{EBO}	Emitter-Base Cut-Off Current	$V_{EB} = 5\text{V}$			5	
I_{CEO}	Collector-Emitter Cut-Off Current	$V_{CE} = 60\text{V}$			1.0	
I_{CEX}		$V_{CE} = 60\text{V}$ $V_{BE} = 1.5\text{V}$ $T_A = 150^\circ\text{C}$			0.3 3	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 5\text{A}$ $V_{CE} = 3\text{V}$ $T_A = -55^\circ\text{C}$	1000		20,000	-
		$I_C = 10\text{A}$ $V_{CE} = 3\text{V}$	200			
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 5\text{A}$ $I_B = 10\text{mA}$			2	V
		$I_C = 10\text{A}$ $I_B = 100\text{mA}$			3	
$V_{BE(on)}^{(1)}$	Base-Emitter Voltage	$I_C = 5\text{A}$ $V_{CE} = 3\text{V}$			2.8	
		$I_C = 10\text{A}$ $V_{CE} = 3\text{V}$			4.5	

DYNAMIC CHARACTERISTICS

$ h_{fe} $	Small-Signal Short-Circuit Forward Current Transfer Ratio	$I_C = 1.0\text{A}$ $V_{CE} = 5\text{V}$ $f = 1.0\text{MHz}$	20		300	-
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			200	pF
t_{on}	Turn-On Time	$I_C = 5\text{A}$ $V_{CC} = 30\text{V}$ $I_{B1} = -I_{B2} = 20\text{mA}$			2.5	μs
t_{off}	Turn-Off Time				10	

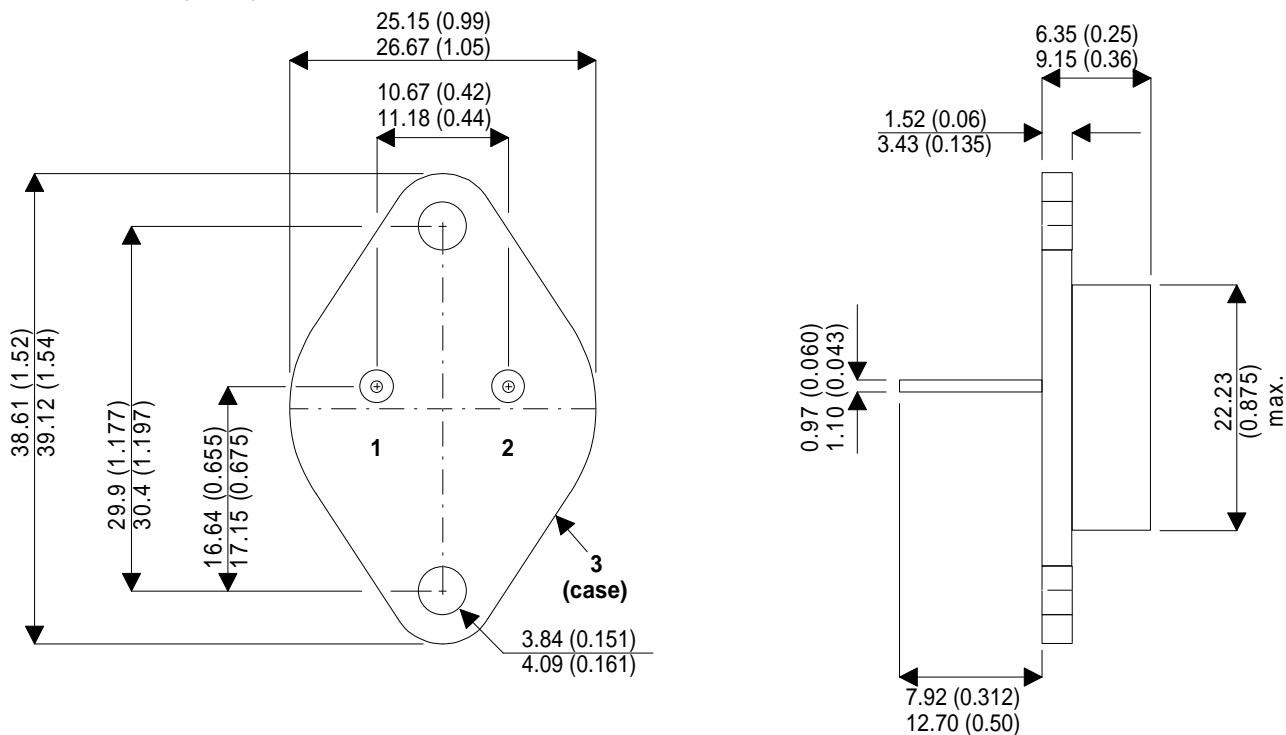
Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

SILICON NPN DARLINGTON POWER TRANSISTOR 2N6384

MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AA) METAL PACKAGE Underside View

Pin 1 - Base

Pin 2 - Emitter

Case - Collector