New Jersey Semi-Conductor Products, Inc.

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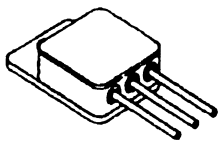
PNP DARLINGTON HIGH POWER SILICON TRANSISTOR

Devices

2N7371



TO-254AA*

*See Appendix A for package outline

MAXIMUM RATINGS

Ratings	Symbol	Value	Units
Collector-Emitter Voltage	V_{CEO}	100	Vdc
Collector-Base Voltage	V_{CBO}	100	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Base Current	I_B	0.2	Adc
Collector Current	I_C	12	Adc
Total Power Dissipation @ $T_C = +25^0C$ (1)	P_T	100	W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +175	^0C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.5	$^0C/W$

1) Derate linearly 0.667 $W/^0C$ above $T_C > +25^0C$

ELECTRICAL CHARACTERISTICS ($T_C = 25^0C$ unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage $I_C = 100$ mAdc	$V_{CEO(sus)}$	100		Vdc
Collector-Emitter Cutoff Current $V_{CE} = 50$ Vdc	I_{CEO}		1.0	mAdc
Collector-Emitter Cutoff Current $V_{CE} = 100$ Vdc, $V_{BE} = 1.5$ Vdc	I_{CEX}		0.5	mAdc
Emitter-Base Cutoff Current $V_{EB} = 5.0$ Vdc	I_{EBO}		2.0	mAdc

Quality Semi-Conductors

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS [2]				
Forward-Current Transfer Ratio I_C = 6.0 Adc, V_{CE} = 3.0 Vdc I_C = 12 Adc, V_{CE} = 3.0 Vdc	h_{FE}	1,000 150	18,000	
Collector-Emitter Saturation Voltage I_C = 12 Adc, I_B = 120 mAdc	$V_{CE(sat)}$		3.0	Vdc
Base-Emitter Saturation Voltage I_C = 12 Adc, I_B = 120 mAdc	$V_{BE(sat)}$		4.0	Vdc
DYNAMIC CHARACTERISTICS				
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 5.0 Adc, V_{CE} = 3.0 Vdc, f = 1.0 MHz	$\lvert h_{fe} \rvert$	10	250	
SWITCHING CHARACTERISTICS				
Turn-On Time V_{CC} = 30 Vdc; I_C = 12 Adc; I_{B1} = 120 mAdc	t_{on}		2.0	μs
Turn-Off Time V_{CC} = 30 Vdc; I_C = 12 Adc; I_{B1} = I_{B2} = 120 mAdc	t_{off}		10	μs

SAFE OPERATING AREA

DC Tests

T_C = +25°C, 1 Cycle, t ≥ 1.0 s

Test 1

V_{CE} = 8.3 Vdc, I_C = 12 Adc

Test 2

V_{CE} = 30 Vdc, I_C = 3.3 Adc

Test 3

V_{CE} = 90 Vdc, I_C = 150 mAdc

(2) Pulse Test: Pulse Width = 300μs, Duty Cycle ≤ 2.0%.