

## PNP POWER SILICON SWITCHING TRANSISTOR

Qualified per MIL-PRF-19500/612

**DEVICES**

**2N7372**

**LEVELS**

**JAN**  
**JANTX**  
**JANTXV**  
**JANS**

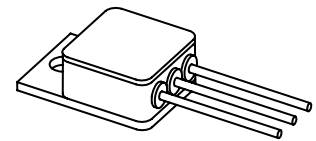
**ABSOLUTE MAXIMUM RATINGS ( $T_C = +25^\circ\text{C}$  unless otherwise noted)**

Parameters / Test Conditions	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	80	Vdc
Collector-Base Voltage	$V_{CBO}$	100	Vdc
Emitter-Base Voltage	$V_{EBO}$	5.5	Vdc
Collector Current	$I_C$	5.0	A <sub>dc</sub>
Total Power Dissipation @ $T_A = +25^\circ\text{C}$ <sup>(1)</sup> @ $T_C = +25^\circ\text{C}$ <sup>(2)</sup>	$P_T$	4.0 58	W
Operating & Storage Junction Temperature Range	$T_j, T_{stg}$	-65 to +200	$^\circ\text{C}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	3	$^\circ\text{C}/\text{W}$

- 1) Derate linearly 22.8mW/ $^\circ\text{C}$  for  $T_A > 25^\circ\text{C}$
- 2) Derate linearly 331mW/ $^\circ\text{C}$  for  $T_C > 25^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS ( $T_A = +25^\circ\text{C}$ , unless otherwise noted)**

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Voltage $I_C = 100\text{mA}_{dc}$	$V_{(BR)CEO}$	80		Vdc
Collector-Emitter Cutoff Current $V_{CE} = 60\text{Vdc}, V_{BE} = 0\text{Vdc}$ $V_{CE} = 100\text{Vdc}, V_{BE} = 0\text{Vdc}$	$I_{CES1}$ $I_{CES2}$		1.0 1.0	$\mu\text{A}_{dc}$ mA <sub>dc</sub>
Collector-Emitter Cutoff Current $V_{CE} = 40\text{Vdc}, I_B = 0$	$I_{CEO}$		50	$\mu\text{A}_{dc}$
Emitter-Base Cutoff Current $V_{EB} = 4.0\text{Vdc}$ $V_{EB} = 5.5\text{Vdc}$	$I_{EBO1}$ $I_{EBO2}$		1.0 1.0	$\mu\text{A}_{dc}$ mA <sub>dc</sub>



**TO-254AA**

**PIN 1 = BASE**  
**PIN 2 = COLLECTOR**  
**PIN 3 = EMITTER**

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### ELECTRICAL CHARACTERISTICS ( $T_A = +25^\circ\text{C}$ , unless otherwise noted) (CONT.)

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
<b>ON CHARACTERISTICS</b> <sup>(3)</sup>				
Forward-Current Transfer Ratio $I_C = 0.05\text{A dc}$ , $V_{CE} = 5.0\text{V dc}$ $I_C = 2.5\text{A dc}$ , $V_{CE} = 5.0\text{V dc}$ $I_C = 5.0\text{A dc}$ , $V_{CE} = 5.0\text{V dc}$	$h_{FE1}$ $h_{FE2}$ $h_{FE3}$	50 70 40	--- 200 ---	
Base-Emitter Non-Saturated Voltage $V_{CE} = 5.0\text{V dc}$ , $I_C = 2.5\text{A dc}$	$V_{BE}$		1.45	Vdc
Base-Emitter Saturation Voltage $I_C = 2.5\text{A dc}$ , $I_B = 0.25\text{A dc}$ $I_C = 5.0\text{A dc}$ , $I_B = 0.5\text{A dc}$	$V_{BE(sat)1}$ $V_{BE(sat)2}$		1.45 2.2	Vdc
Collector-Emitter Saturation Voltage $I_C = 2.5\text{A dc}$ , $I_B = 0.25\text{A dc}$ $I_C = 5.0\text{A dc}$ , $I_B = 0.5\text{A dc}$	$V_{CE(sat)1}$ $V_{CE(sat)2}$		0.75 1.5	Vdc

### DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Common Emitter Small Signal, Short Circuit Forward Current Transfer Ratio $V_{CE} = 5\text{V dc}$ , $I_C = 100\text{mA dc}$ , $f = 1\text{kHz}$	$h_{fe}$	50		
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 0.5\text{A dc}$ , $V_{CE} = 5\text{V dc}$ , $f = 10\text{MHz}$	$ h_{fe} $	7.0		
Output Capacitance $V_{CB} = 10\text{V dc}$ , $I_E = 0$ , $100\text{kHz} \leq f \leq 1.0\text{MHz}$	$C_{obo}$		250	pF

### SAFE OPERATING AREA

#### DC Tests

$T_C = +25^\circ\text{C}$ , 1 Cycle,  $t = 1\text{s}$

#### Test 1

$V_{CE} = 12\text{V dc}$ ,  $I_C = 5.0\text{A dc}$

#### Test 2

$V_{CE} = 32\text{V dc}$ ,  $I_C = 1.5\text{A dc}$

#### Test 3

$V_{CE} = 80\text{V dc}$ ,  $I_C = 100\text{mA dc}$

(3) Pulse Test: Pulse Width =  $300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$