NEW ENGLAND SEMICONDUCTOR

TECHNICAL DATA

2N5671 JAN, JTX, JTXV
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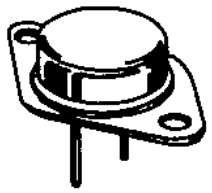
MIL-PRF QPL DEVICES

Processed per MIL-PRF-19500/488

NPN HIGH-POWER SILICON TRANSISTOR

MAXIMUM RATINGS

Ratings	Symbol	2N5671	2N5672	Units
Collector-Emitter Voltage	V_{CEO}	90	120	Vdc
Collector-Base Voltage	V_{CBO}	120	150	Vdc
Emitter-Base Voltage	V_{EBO}	7.0		Vdc
Base Current	I_B	10		Adc
Collector Current	I_C	30		Adc
Total Power Dissipation @ $T_A = 25^0C$ (1) @ $T_C = 25^0C$ (2)	P_T	6.0 140		W W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		^0C



TO-3 (TO-204AA)

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.25	$^0C/W$

1) Derate linearly 34.2 mW/^{0}C for $T_A > 25^0C$
2) Derate linearly 800 mW/^{0}C for $T_C > 25^0C$

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

Characteristics		Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage I_C = 200 mAdc	2N5671 2N5672	$V_{(BR)CEO}$	90 120		Vdc
Collector-Emitter Breakdown Voltage I_C = 200 mAdc	2N5671 2N5672	$V_{(BR)CER}$	110 140		Vdc
Collector-Emitter Breakdown Voltage I_C = 200 mAdc	2N5671 2N5672	$V_{(BR)CEX}$	120 150		Vdc
Collector-Emitter Cutoff Current V_{CE} = 80 Vdc		I_{CEO}		10	mAdc
Collector-Emitter Cutoff Current V_{CE} = 110 Vdc, V_{BE} = 1.5 Vdc V_{CE} = 135 Vdc, V_{BE} = 1.5 Vdc	2N5671 2N5672	I_{CEX}		12 10	mAdc

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ELECTRICAL CHARACTERISTICS (con't)

Characteristics		Symbol	Min.	Max.	Unit
Collector-Base Cutoff Current					
V_{CB} = 120 Vdc	2N5671	I_{CBO}		25	mAdc
V_{CB} = 150 Vdc	2N5672			25	
Emitter-Base Cutoff Current					
V_{EB} = 7.0 Vdc		I_{EBO}		10	mAdc
ON CHARACTERISTICS (3)					
Forward-Current Transfer Ratio					
I_C = 15 Adc, V_{CE} = 2.0 Vdc			20	100	
I_C = 20 Adc, V_{CE} = 5.0 Vdc		h_{FE}	20		
Collector-Emitter Saturation Voltage					
I_C = 15 Adc, I_B = 1.2 Adc		$V_{CE(sat)}$		0.75	Vdc
I_C = 30 Adc, I_B = 6.0Adc				5.0	
Base-Emitter Saturation Voltage					
I_C = 15 Adc, I_B = 1.2 Adc		$V_{BE(sat)}$		1.5	Vdc
DYNAMIC CHARACTERISTICS					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio					
I_C = 2.0 Adc, V_{CE} = 10 Vdc, f = 5.0 MHz		$\lvert h_{fe} \rvert$	10	40	
Output Capacitance					
V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz		C_{obo}		900	pF
SWITCHING CHARACTERISTICS					
Turn-On Time					
V_{CC} = 30 ± 2.0 Vdc; I_C = 15 Adc; I_{B1} = 1.2 Adc		t_{on}		0.5	µs
Turn-Off Time					
V_{CC} = 30 ± 2.0 Vdc; I_C = 15 Adc; I_{B1} = I_{B2} = 1.2 Adc		t_{off}		1.5	µs

SAFE OPERATING AREA

DC Tests

T_C = +25^{0}C, 1 Cycle, t = 1.0 s

Test

V_{CE} = 24 Vdc, I_C = 5.8 Adc

Test 2

V_{CE} = 45 Vdc, I_C = 0.9 Adc

Test 3

V_{CE} = 4.67 Vdc, I_C = 30 Adc

Test 4

V_{CE} = 90 Vdc, I_C = 0.19 Adc 2N5671

Test 5

V_{CE} = 120 Vdc, I_C = 0.11 Adc 2N5672

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