

MULTIPLE (QUAD) PNP SILICON SWITCHING TRANSISTOR

Qualified per MIL-PRF-19500/558

Devices

2N6987
2N6987U

2N6988

Qualified Level

JAN
JANTX
JANTXV
JANS

MAXIMUM RATINGS ⁽¹⁾

Ratings	Symbol	Value	Units
Collector-Emitter Voltage ⁽⁴⁾	V _{CEO}	60	Vdc
Collector-Base Voltage ⁽⁴⁾	V _{CBO}	60	Vdc
Emitter-Base Voltage ⁽⁴⁾	V _{EBO}	5.0	Vdc
Collector Current	I _C	600	mAdc
Total Power Dissipation @ T _A = +25 ⁰ C	P _T	2N6987 ⁽²⁾	1.5
		2N6987U ⁽²⁾	1.0
		2N6988 ⁽³⁾	0.4
Operating & Storage Junction Temperature Range	T _{op} , T _{stg}	-65 to +200	⁰ C

1) Maximum voltage between transistors shall be ≥ 500 Vdc

2) Derate linearly 8.57 mW/⁰C above T_A = +25⁰C

3) Derate linearly 2.286 mW/⁰C above T_A = +25⁰C.

4) Ratings apply to each transistor in the array.



*See appendix A for package outline

ELECTRICAL CHARACTERISTICS (T_A = 25⁰C unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage I _C = 10 mAdc	V _{(BR)CEO}	60		Vdc
Collector-Base Cutoff Current V _{CB} = 60 Vdc V _{CB} = 50 Vdc	I _{CBO}		10 10	μAdc ηAdc
Emitter-Base Cutoff Current V _{BE} = 5.0 Vdc V _{EB} = 3.5 Vdc	I _{EBO}		10 50	μAdc ηAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
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ON CHARACTERISTICS

Forward-Current Transfer Ratio $I_C = 0.1 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 1.0 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 10 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 150 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 500 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$	h_{FE}	75 100 100 100 50	450 300	
Collector-Emitter Saturation Voltage $I_C = 150 \text{ mA dc}, I_B = 15 \text{ mA dc}$ $I_C = 500 \text{ mA dc}, I_B = 50 \text{ mA dc}$	$V_{CE(sat)}$		0.4 1.6	Vdc
Base-Emitter Voltage $I_C = 150 \text{ mA dc}, I_B = 15 \text{ mA dc}$ $I_C = 500 \text{ mA dc}, I_B = 50 \text{ mA dc}$	$V_{BE(sat)}$		1.3 2.6	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Small-Signal Short-Circuit Forward-Current Transfer Ratio $I_C = 50 \text{ mA dc}, V_{CE} = 20 \text{ V dc}, f = 100 \text{ MHz}$	$ h_{fe} $	2.0	8.0	
Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 1.0 \text{ mA dc}, V_{CE} = 10 \text{ V dc}, f = 1.0 \text{ kHz}$	h_{fe}	100		
Output Capacitance $V_{CB} = 10 \text{ V dc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{obo}		8.0	pF
Input Capacitance $V_{EB} = 2.0 \text{ V dc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{ibo}		30	pF