



NES

NEW ENGLAND SEMICONDUCTOR

2N3789

2N3790

2N3791*

2N3792*

*also available as
JAN, JANTX,
JANTXV

SILICON PNP POWER TRANSISTORS

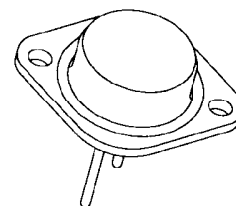
...designed for medium-speed switching and amplifier applications.

- TOTAL SWITCHING TIME @ 3 A $\approx 1 \mu\text{s}$ (TYP)
- LOW $V_{CE(SAT)} = 0.5 \text{ V}$ (TYP) @ $I_C = 4.0 \text{ A}$, $I_B = 0.4 \text{ A}$
- EXCELLENT SAFE AREA LIMITS
- COMPLEMENTARY NPN TYPES AVAILABLE - 2N3713 THRU 2N3716

10 AMPERE

POWER TRANSISTORS
PNP SILICON

60-80 VOLTS
150 WATTS

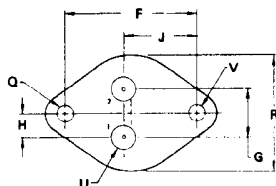
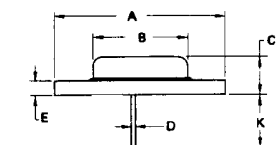


TO-3

MAXIMUM RATINGS

RATINGS	SYMBOL	2N3789 2N3791	2N3790 2N3792	UNITS
Collector-Emitter Voltage	V_{CEO}	60	80	Vdc
Collector-Base Voltage	V_{CB}	60	80	Vdc
Emitter-Base Voltage	V_{EB}	7.0		Vdc
Collector Current -- Continuous	I_C	10		Adc
Base Current -- Continuous	I_B	4.0		Adc
Power Dissipation	P_D	150		W
Thermal Resistance	θ_{JC}	1.17		$^{\circ}\text{C/W}$
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^{\circ}\text{C}$

MECHANICAL OUTLINE



PN 1: BASE
2: EMITTER
CASE: COLLECTOR

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	-	39.37	-	1.550
B	-	21.08	-	0.830
C	6.35	7.62	0.250	0.300
D	0.97	1.09	0.038	0.043
E	1.40	1.78	0.055	0.070
F	30.15 BSC		1.187 BSC	
G	10.92 BSC		0.430 BSC	
H	5.46 BSC		0.215 BSC	
J	16.89 BSC		0.665 BSC	
K	11.18	12.19	0.440	0.480
Q	3.81	4.19	0.150	0.165
R	-	26.67	-	1.050
U	4.93	5.33	0.190	0.210
V	3.81	4.19	0.150	0.165

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T4-4.8-860-321 REV: --



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

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (1) $I_C = 200 \text{ mAdc}, I_B = 0$ 2N3789, 2N3791 2N3790, 2N3792	$V_{CEO(sus)}$	60 80		Vdc
Collector-Emitter Cutoff Current $V_{CE} = 60 \text{ Vdc}, V_{BE} = -1.5 \text{ Vdc}$ $V_{CE} = 80 \text{ Vdc}, V_{BE} = -1.5 \text{ Vdc}$ $V_{CE} = 60 \text{ Vdc}, V_{BE} = -1.5 \text{ Vdc}, T_C = 150^{\circ}\text{C}$ $V_{CE} = 80 \text{ Vdc}, V_{BE} = -1.5 \text{ Vdc}, T_C = 150^{\circ}\text{C}$ 2N3789, 2N3791 2N3790, 2N3792 2N3789, 2N3791 2N3790, 2N3792	I_{CEX}		1.0 1.0 5.0 5.0	mAdc
Emitter-Base Cutoff Current $V_{EB} = 7.0 \text{ Vdc}$ All Types	I_{EBO}		5.0	mAdc
ON CHARACTERISTICS				
DC Current Gain (1) $I_C = 1.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ 2N3789, 2N3790 2N3791, 2N3792 $I_C = 3.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ 2N3789, 2N3790 2N3791, 2N3792	h_{FE}	25 50 15 30	90 180 - -	-
Collector-Emitter Saturation Voltage (1) $I_C = 4.0 \text{ Adc}, I_B = 0.4 \text{ Adc}$ 2N3789, 2N3790 $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$ 2N3791, 2N3792	$V_{CE(sat)}$		1.0 1.0	Vdc
Base-Emitter On Voltage (1) $I_C = 5.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ 2N3789, 2N3790 2N3791, 2N3792 $I_C = 10 \text{ Adc}, V_{CE} = 4.0 \text{ Vdc}$ All Types	$V_{BE(on)}$		2.0 1.8 4.0	Vdc
DYNAMIC CHARACTERISTICS				
Current Gain -- Bandwidth Product $V_{CE} = 10 \text{ Vdc}, I_C = 0.5 \text{ Adc}, f = 1.0 \text{ MHz}$ All Types	f_T	4.0		MHz

(1) Sweep Test: 1/2 Sine Wave Cycle @ 60 cps.

SX LEVEL RELIABILITY TESTING

100% SCREENING	GROUP A	GROUP B (Sample)	GROUP C (Sample)
Internal Visual	Visual and Mechanical	Solderability	Physical Dimensions
Temp Cycle	DC Static Tests 25°C	Temp Cycle	Thermal Shock
Thermal Response	DC Static Tests High Temp	Fine and Gross Leak	Terminal Strength
Constant Acceleration	DC Static Tests Low Temp	Bond Strength	Hermetic Seal
PIND	Dynamic Tests @ 25°C	Intermittent Op Life	Moisture Resistance
Fine and Gross Leak		Steady State Op Life	Shock Test
HTRB		Thermal Resistance	Vibration Test
Power Burn In		Hi-Temp (non-operating)	Constant Acceleration
			Salt Atmosphere
			Operation Life

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