

## PNP 2N3789 – 2N3790 – 2N3791 – 2N3792

### EPITAXIAL-BASE TRANSISTORS

The 2N3789, 2N3790, 2N3791 and 2N3792 are silicon epitaxial-base PNP power transistor in Jedec TO-3 metal case. They are intended for use in power linear and switching applications. The 2N3713, 2N3714, 2N3715 and 2N3716 complementary NPN types are respectively. Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
$V_{CBO}$	Collector-Base Voltage	$I_E = 0$	2N3789	V
			2N3791	
			2N3790	
			2N3792	
$V_{CEO}$	Collector-Emitter Voltage	$I_B = 0$	2N3789	V
			2N3791	
			2N3790	
			2N3792	
$V_{EBO}$	Emitter-Base Voltage	$I_C = 0$	-7	V
$I_C$	Collector Current		-10	A
$I_B$	Base Current		-4	A
$P_D$	Total Device Dissipation	@ $T_C = 25^\circ$	150	W
$T_J$	Junction Temperature		-65 to +200	$^\circ\text{C}$
$T_S$	Storage Temperature			

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJC}$	Thermal Resistance, Junction to Case (Max)		1.17 $^\circ\text{C/W}$

## PNP 2N3789 – 2N3790 – 2N3791 – 2N3792

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$V_{CEO(BR)}$	Collector-Emitter Breakdown Voltage	$I_C = -200 \text{ mA}, I_B = 0 (*)$	2N3789	-60	-	-	V
			2N3791				
			2N3790	-80	-	-	
			2N3792				
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (*)	$I_C = -200 \text{ mA}, I_B = 0 (*)$	2N3789	-60	-	-	V
			2N3791				
			2N3790	-80	-	-	
			2N3792				
$I_{CEO}$	Collector-Emitter Current	$V_{CE} = -30 \text{ V}, I_B = 0$	2N3789	-	-	-0.7	mA
			2N3791				
		$V_{CE} = -40 \text{ V}, I_B = 0$	2N3790	-	-	-0.7	
			2N3792				
$I_{CEV}$	Collector Cutoff Current	$V_{CE} = -80 \text{ V}, V_{EB} = 1.5 \text{ V}$	2N3789	-	-	-1	mA
			2N3791				
		$V_{CE} = -100 \text{ V}, V_{EB} = 1.5 \text{ V}$	2N3790	-	-	-1	
			2N3792				
		$V_{CE} = -60 \text{ V}, V_{EB} = 1.5 \text{ V}$ $T_C = 150^\circ\text{C}$	2N3789	-	-	-10	
			2N3791				
		$V_{CE} = -80 \text{ V}, V_{EB} = 1.5 \text{ V}$ $T_C = 150^\circ\text{C}$	2N3790	-	-	-10	
			2N3792				
$I_{EBO}$	Emitter Cutoff Current	$V_{BE} = -7 \text{ V}, I_C = 0$	2N3713	-	-	-5	mA
			2N3714				
			2N3715				
			2N3716				
$h_{FE}$	DC Current Gain (*) (**)	$I_C = -1 \text{ A}, V_{CE} = -2 \text{ V}$	2N3789	25	-	90	-
			2N3790				
			2N3791	50	-	150	
			2N3792				
		$I_C = -3 \text{ A}, V_{CE} = -2 \text{ V}$	2N3789	15	-	-	
			2N3790				
			2N3791	30	-	-	
			2N3792				
		$I_C = -10 \text{ A}, V_{CE} = -4 \text{ V}$	2N3789	5	-	-	
			2N3790				
			2N3791				
			2N3792				
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*) (**)	$I_C = -5 \text{ A}, I_B = -0.5 \text{ A}$	2N3791	-	-	-1	V
			2N3792				

## PNP 2N3789 – 2N3790 – 2N3791 – 2N3792

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*) (**)	$I_C = -5\text{ A}, I_B = -0.5\text{ A}$	2N3789	-	-	-2	V
			2N3790	-	-	-1.5	
			2N3791	-	-	-1.5	
			2N3792	-	-	-1.5	
$V_{BE}$	Base-Emitter Voltage (*) (**)	$I_C = -3\text{ A}, V_{CE} = -2\text{ V}$	2N3789	-	-	-1.5	V
			2N3790	-	-	-1.5	
$h_{fe}$	Small Signal Current Gain	$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}$ $f = 1.0\text{ kHz}$	2N3789	25	-	250	-
			2N3790				
			2N3791				
			2N3792				
		$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}$ $f = 1.0\text{ MHz}$	2N3789	4	-	4	-
			2N3790				
			2N3791				
			2N3792				

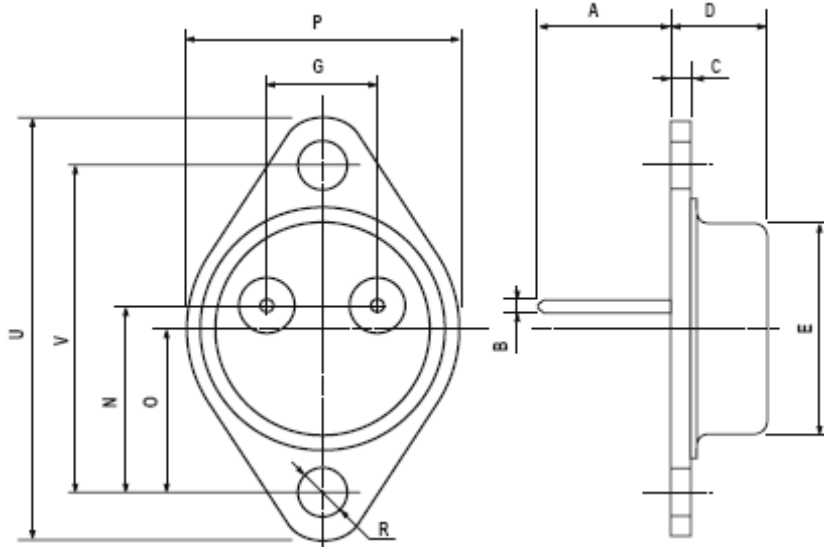
(\*) Pulse Width  $\approx 300\ \mu\text{s}$ , Duty Cycle  $\angle 2.0\%$

(\*\*) These parameters are measured with voltage sensing contacts separate from the current carrying contacts

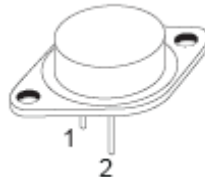
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### MECHANICAL DATA CASE TO-3

DIMENSIONS (mm)		
	min	max
A	11	13.10
B	0.97	1.15
C	1.5	1.65
D	8.32	8.92
F	19	20
G	10.70	11.1
N	16.50	17.20
P	25	26
R	4	4.09
U	38.50	39.30
V	30	30.30



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector



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