



PNP 2N4398 – 2N4399 – 2N5745

SILICON POWER TRANSISTORS

They are PNP transistors mounted in Jedec TO-3 package.
They are intended for use in power amplifier and switching circuits applications.
Complement to NPN 2N5301 – 2N5302 – 2N5303.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CEO}	Collector-Emitter Voltage	2N4398	-40	V
		2N4399	-60	
		2N5745	-80	
V_{CBO}	Collector-Base Voltage	2N4398	-40	V
		2N4399	-60	
		2N5745	-80	
V_{EBO}	Emitter-Base Voltage		-5	V
I_C	Collector Current	2N4398	-30	A
		2N4399		
		2N5745	-20	
I_{CM}	Collector Peak Current		50	A
I_B	Base Current		-7.5	A
I_{BM}	Base Peak Current		15	A
P_{TOT}	Power Dissipation	@ $T_C = 25^\circ$	200	W
T_J	Junction Temperature		200	°C
T_S	Storage Temperature		-65 to +200	

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	0.875	°C/W
R_{thJ-A}	Thermal Resistance, Junction to Ambient	35	°C/W

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	MAx	Unit
$V_{CEO(BR)}$	Collector-Emitter Breakdown Voltage (*)	$I_C = -200\text{ mA}$ $I_B = 0$	2N4398	-40	-	-	V
			2N4399	-60	-	-	
			2N5745	-80	-	-	
I_{CBO}	Collector Cutoff Current	$V_{CB} = -40\text{ V}, I_E = 0$	2N4398	-	-	-1	mA
		$V_{CB} = -60\text{ V}, I_E = 0$	2N4399				
		$V_{CB} = -80\text{ V}, I_E = 0$	2N5745				
I_{CEO}	Collector Cutoff Current	$V_{CE} = -40\text{ V}, I_B = 0$	2N4398	-	-	-5	mA
		$V_{CE} = -60\text{ V}, I_B = 0$	2N4399				
		$V_{CE} = -80\text{ V}, I_B = 0$	2N5745				
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -5\text{ V}, I_C = 0$	2N4398	-	-	-5	mA
			2N4399				
			2N5745				
I_{CEX}	Collector Cutoff Current	$V_{CE} = -40\text{ V}, V_{BE} = 1.5\text{ V}$	2N4398	-	-	-5	mA
		$V_{CE} = -40\text{ V}, V_{BE} = 1.5\text{ V}$	2N4399				
		$V_{CE} = -40\text{ V}, V_{BE} = 1.5\text{ V}$	2N5745				
		$V_{CE} = -40\text{ V}, V_{BE} = 1.5\text{ V}$ $T_C = 150^{\circ}\text{C}$	2N4398	-	-	-10	
		$V_{CE} = -40\text{ V}, V_{BE} = 1.5\text{ V}$ $T_C = 150^{\circ}\text{C}$	2N4399				
		$V_{CE} = -40\text{ V}, V_{BE} = 1.5\text{ V}$ $T_C = 150^{\circ}\text{C}$	2N5745				
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = -10\text{ A}, I_B = -1\text{ A}$	2N4398	-	-	-0.75	V
			2N4399			-1	
			2N5745			-1	
		$I_C = -15\text{ A}, I_B = -1.5\text{ A}$	2N4398	-	-	-1.5	
			2N4399			-2	
			2N5745			-4	
		$I_C = -20\text{ A}, I_B = -2\text{ A}$	2N4398	-	-	-4	
			2N4399			-4	
			2N5745			-4	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	$I_C = -10\text{ A}, I_B = -1\text{ A}$	2N4398	-	-	-1.6	V
			2N4399			-1.7	
			2N5745			-1.85	
		$I_C = -15\text{ A}, I_B = -1.5\text{ A}$	2N4398	-	-	-2	
			2N4399			-2.5	
			2N5745			-2.5	
		$I_C = -20\text{ A}, I_B = -2\text{ A}$	2N4398	-	-	-2.5	
			2N4399			-2.5	
			2N5745			-2.5	



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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	MA _x	Unit	
V _{BE(on)}	Base-Emitter on Voltage (*)	I _C = -15 A, V _{CE} = -2 V	2N4398	-	-	-1.7	V	
			2N4399					
		I _C = -10 A, V _{CE} = -2 V	2N5745	-	-	-1.5		
		I _C = -30 A, V _{CE} = -4 V	2N4398	-	-	-3		
			2N4399					
I _C = -20 A, V _{CE} = -4 V	2N5745	-	-	-2.5				
h _{FE}	DC Current Gain (*)	I _C = -1 A, V _{CE} = -2 V	2N4398	40	-	-	-	
			2N4399	-	-	-		
			2N5745	-	-	-		
		I _C = -15 A, V _{CE} = -2 V	2N4398	15	-	60		
			2N4399					
		I _C = -10 A, V _{CE} = -2 V	2N5745					
		I _C = -30 A, V _{CE} = -2 V	2N4398	5	-	-		
			2N4399					
		I _C = -20 A, V _{CE} = -4 V	2N5745					
f _T	Transition Frequency	V _{CE} = -10 V, I _C = -1 A f= 1 MHz	2N4398	4	-	-	MHz	
			2N4399					
			2N5745	2	-	-		

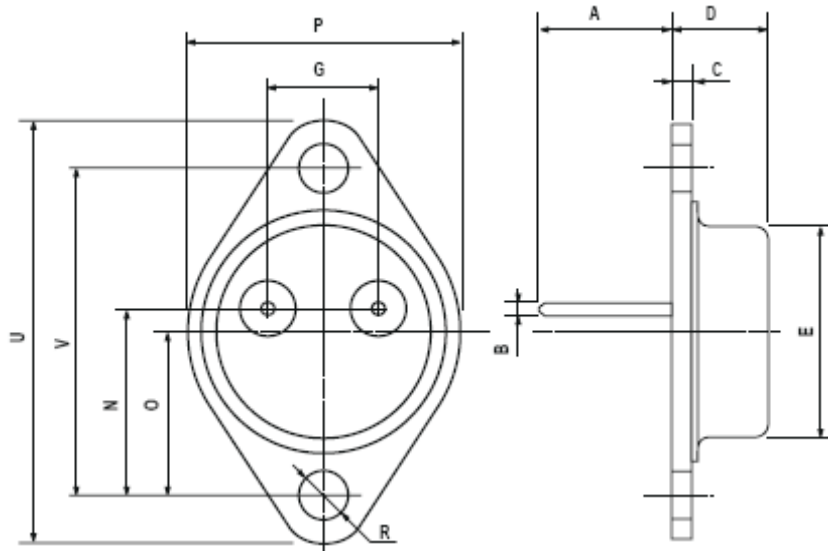
(*) Pulse Width $\approx 300\text{ }\mu\text{s}$, Duty Cycle $\angle 2\%$



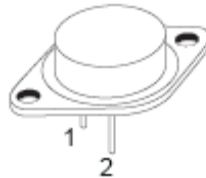
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MECHANICAL DATA CASE TO-3

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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