New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

PNP SILICON HIGH-POWER TRANSISTORS

General Purpose use in amplifier and switching applications.

PNP
2N4398
2N4399
2N5745

20 , 30 AMPERE
PNP SILICON
POWER TRANSISTORS
40-80 Volts
200 Watts

FEATURES:

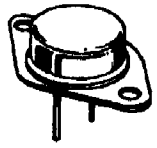
*DC Current Gain Specified- 1.0 to 30 A
* Low Collector-Emitter Saturation Voltage -
$V_{CE(sat)}$ = 0.75 V (Max.) @ I_C = 10 A - 2N4398, 2N4399
$V_{CE(sat)}$ = 1.0 V (Max.) @ I_C = 10 A - 2N5745
* Complements to NPN 2N5301,2N5302,2N5303

MAXIMUM RATINGS

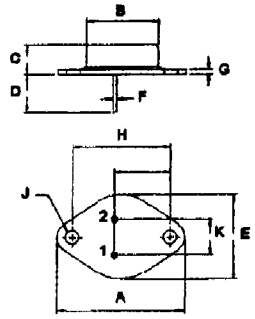
Characteristic	Symbol	2N4398	2N4399	2N5745	Unit
Collector-Emitter Voltage	V_{CBO}	40	60	80	V
Collector-Emitter Voltage	V_{CEO}	40	60	80	V
Emitter-Base Voltage	V_{EB}	5.0			V
Collector Current-Continuous -Peak	I_C	30 50	30 50	20 50	A
Base current - Continuous - Peak	I_B	7.5 15			A
Total Power Dissipation @T_C=25°C Derate above 25°C	P_D	200 1.15			W W/°C
Operating and Storage Junction Temperature Range	T_J,T_{STG}	- 65 to +200			°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta JC}$	0.875	°C/W



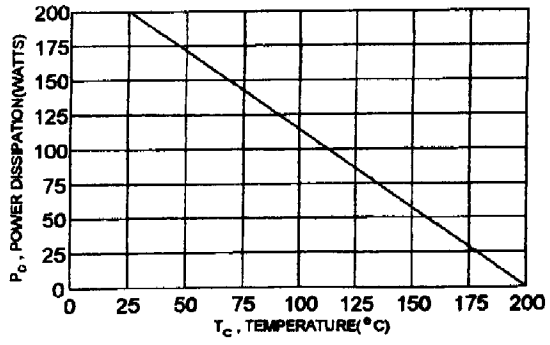
TO-3



PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.67	11.18

FIGURE -1 POWER DERATING



ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Sustaining Voltage (1)		$V_{CEO(SUS)}$			V
(I_C = 200 mA, I_B = 0)	2N4398		40		
	2N4399		60		
	2N5745		80		
Collector Cutoff Current		I_{CEO}			mA
(V_{CE} = 40 V, I_B = 0)	2N4398			5.0	
(V_{CE} = 60 V, I_B = 0)	2N4399			5.0	
(V_{CE} = 80 V, I_B = 0)	2N5745			5.0	
Collector Cutoff Current		I_{CEX}			
(V_{CE} = 40 V, $V_{BE(off)}$ = 1.5 V)	2N4398			5.0	mA
(V_{CE} = 60 V, $V_{BE(off)}$ = 1.5 V)	2N4399			5.0	
(V_{CE} = 80 V, $V_{BE(off)}$ = 1.5 V)	2N5745			5.0	
(V_{CE} = 30 V, $V_{BE(off)}$ = 1.5 V, T_C = 150°C)	2N4398, 2N4399			10	mA
(V_{CE} = 80 V, $V_{BE(off)}$ = 1.5 V, T_C = 150°C)	2N5745			10	
Emitter Cutoff Current		I_{EBO}		5.0	mA
(V_{EB} = 5.0 V , I_C = 0)	All Types				
ON CHARACTERISTICS (1)					
DC Current Gain		hFE			
(I_C = 1.0 A, V_{CE} = 2.0 V)	All Types		40		
(I_C = 10 A, V_{CE} = 2.0 V)	2N5745		15	60	
(I_C = 15 A, V_{CE} = 2.0 V)	2N4398, 2N4399		15	60	
(I_C = 20 A, V_{CE} = 2.0 V)	2N5745		5.0		
(I_C = 30 A, V_{CE} = 4.0 V)	2N4398, 2N4399		5.0		
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			V
(I_C = 10 A, I_B = 1.0 A)	2N4398, 2N4399			0.75	
	2N5745			1.0	
(I_C = 15 A, I_B = 1.5 A)	2N4398, 2N4399			1.0	
	2N5745			1.5	
(I_C = 20 A, I_B = 2.0 A)	2N4398, 2N4399			2.0	
(I_C = 20 A, I_B = 4.0 A)	2N5745			2.0	
(I_C = 30 A, I_B = 6.0 A)	2N4398, 2N4399			4.0	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$			V
(I_C = 10 A, I_B = 1.0 A)	2N4398, 2N4399			1.6	
	2N5745			1.7	
(I_C = 15 A, I_B = 1.5 A)	2N4398, 2N4399			1.85	
	2N5745			2.0	
(I_C = 20 A, I_B = 2.0 A)	2N4398, 2N4399			2.5	
(I_C = 20 A, I_B = 4.0 A)	2N5745			2.5	
Base-Emitter On Voltage		$V_{BE(on)}$			V
(I_C = 10 A, V_{CE} = 2.0 V)	2N5745			1.5	
(I_C = 15 A, V_{CE} = 2.0 V)	2N4398, 2N4399			1.7	
(I_C = 20 A, V_{CE} = 4.0 V)	2N5745			2.5	
(I_C = 30 A, V_{CE} = 4.0 V)	2N4398, 2N4399			3.0	

(1) Pulse Test: Pulse width ≦ 300 μs , Duty Cycle ≦ 2.0%