

**HIGH-VOLTAGE POWER NPN SILICON TRANSISTORS**

... designed for use in high-voltage, high-speed, power switching regulators, converter, converter, inverter, motor control system application.

**FEATURES:**

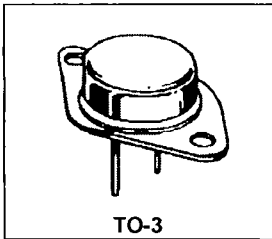
- \* Collector-Emitter Sustaining Voltage-  
 $V_{CE(sus)} = 300\text{ V (Min)}$
- \* Collector-Emitter Saturation Voltage-  
 $V_{CE(sat)} = 2.5\text{ V (Max.) @ } I_C = 2.0\text{ A}$
- \*DC Current gain  $h_{fe} = 20\text{ (Min.) } I_C = 2.0\text{ A}$

**NPN  
 2N5240**

**5 AMPERES  
 POWER TRANSISTOR  
 NPN SILICON  
 300 VOLTS  
 100 WATTS**

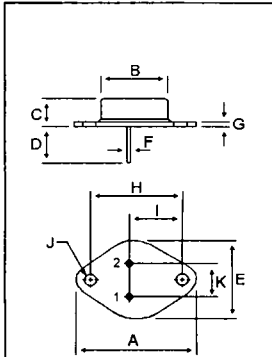
**MAXIMUM RATINGS**

Rating	Symbol	2N5240	Unit
Collector-Base Voltage	$V_{CB}$	375	V
Collector-Emitter Voltage	$V_{CEO}$	300	V
Emitter-Base Voltage	$V_{EB}$	6.0	V
Collector Current-Continuous Peak	$I_C$	5	A
Base Current	$I_B$	2	A
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	100 0.57	Watts $\text{W}/^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	-65 to +200	$^\circ\text{C}$



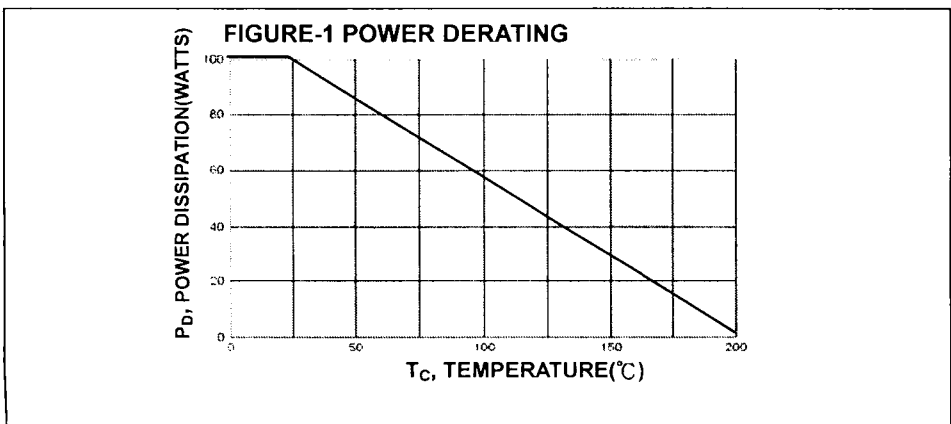
**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, junction to Case	$R_{\theta JC}$	1.75	$^\circ\text{C}/\text{W}$



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



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

Characteristic	Symbol	Min.	Typ.	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Sustaining Voltage ( $I_C = 0.20\text{Adc}$ , $I_B = 0$ )	$V_{CEO(sus)}$	300	--	--	V
Base-Emitter Breakdown Voltage ( $I_E = 0.02\text{Adc}$ , $I_C = 0$ )	$V_{EBO}$	6	--	--	V
Collector Current ( $V_{CE} = 200\text{Vdc}$ , $I_B = 0$ )	$I_{CEO}$	--	--	2	mAdc
Emitter Cutoff Current ( $V_{BE} = 6.0\text{Vdc}$ , $I_C = 0$ )	$I_{EBO}$	--	--	5	mAdc

**ON CHARACTERISTICS(1)**

DC current gain ( $I_C = 0.4\text{Adc}$ , $V_{CE} = 10.0\text{Vdc}$ ) ( $I_C = 2.0\text{Adc}$ , $V_{CE} = 10.0\text{Vdc}$ ) ( $I_C = 4.5\text{Adc}$ , $V_{CE} = 10.0\text{Vdc}$ )	$h_{FE}$	20 20 5	-- -- --	80 80 --	
Collector-Emitter Saturation Voltage ( $I_C = 2.0\text{Adc}$ , $I_B = 0.25\text{Adc}$ ) ( $I_C = 4.5\text{Adc}$ , $I_B = 1.125\text{Adc}$ )	$V_{CE(sat)}$	-- --	-- --	2.5 5.0	Vdc
Base-Emitter Saturation Voltage ( $I_C = 20\text{Adc}$ , $I_B = 2.0\text{Adc}$ ) ( $I_C = 50\text{Adc}$ , $I_B = 10\text{Adc}$ )	$V_{BE(sat)}$	-- --	-- --	1.8 3.5	Vdc
Base-Emitter On Voltage ( $I_C = 2.0\text{Adc}$ , $V_{CE} = 10.0\text{Vdc}$ )	$V_{BE(on)}$	--	--	3.0	Vdc

**DYNAMIC CHARACTERISTICS**

Current-Gain—Bandwidth Product ( $I_C = 0.2\text{Adc}$ , $V_{CE} = 10\text{Vdc}$ , $f=10\text{MHz}$ )	$f_T$	2	--	--	MHz
Output Capacitance ( $V_{CB} = 10\text{Vdc}$ , $I_E = 0$ , $f=0.1\text{MHz}$ )	$C_{ob}$	--	--	250	pF