



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 $h_{fe} = 20 \text{ (Min.) } I_C = 2.0 \text{ A}$

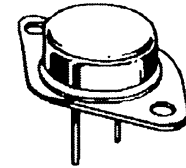
**NPN
2N5240**

**5 AMPERES
POWER TRANSISTOR
NPN SILICON**

**300 VOLTS
100 WATTS**

MAXIMUM RATINGS

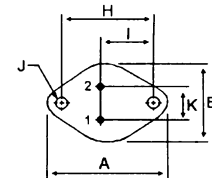
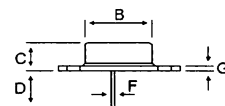
Rating	Symbol	2N5240	Unit
Collector-Base Voltage	V_{CB}	375	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EB}	6.0	V
Collector Current-Continuous Peak	I_C	5	A
Base Current	I_B	2	A
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	100 0.57	Watts $\text{W}/^\circ\text{C}$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



TO-3

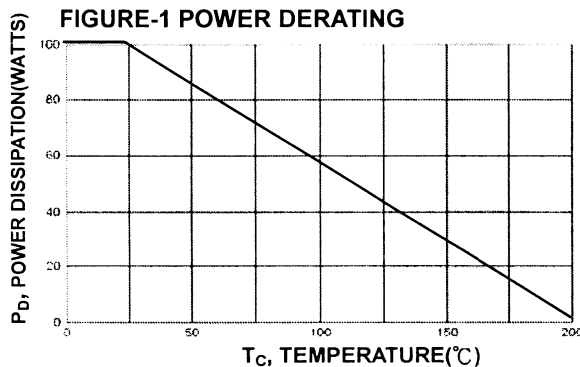
THERMAL CHARACTERISTICS

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
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage ($I_C = 0.20\text{Adc}$, $I_B = 0$)	$V_{CE(sus)}$	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