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2N6413 NPN (SILICON)

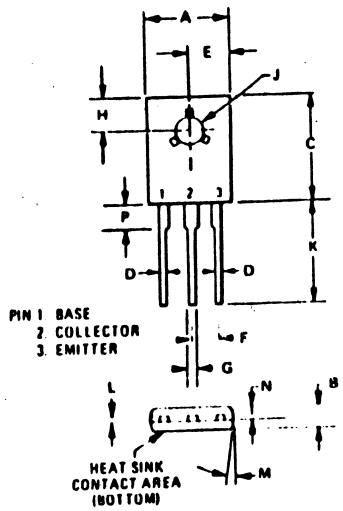
***MAXIMUM RATINGS**

Rating	Symbol		Unit
Collector-Emitter Voltage	V_{CEO}	60	Vdc
Collector-Base Voltage	V_{CBO}	80	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	Vdc
Collector Current – Continuous – Peak	I_C	4.0 8.0	Adc Adc
Base Current	I_B	1.0	Adc
Total Power Dissipation @ $T_C = 25^oC$ Derate Above 25^oC	P_D	15 0.12	Watts $W/^oC$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +150	^oC

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	8.34	$^oC/W$

*Indicates JEDEC Registered Data.



DIM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	0.295	0.305	7.490	7.750
B	0.095	0.105	2.410	2.670
C	0.425	0.435	10.800	11.050
D	0.020	0.026	0.508	0.660
E	0.145	0.155	3.680	3.940
F	0.053 TP		2.360 TP	
G	0.025	0.035	0.635	0.889
H	0.140	0.150	3.760	4.010
J	0.115	0.118	2.920	3.000
K	0.595	0.645	15.110	16.380
L	0.015	0.025	0.381	0.635
M	3° TYP		3° TYP	
N	0.045	0.055	1.140	1.400
P	0.085	0.095	2.160	2.410

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (1) (I_C = 10 mAdc, I_B = 0)	$V_{CEO(sus)}$	60	–	Vdc
Collector Cutoff Current (V_{CE} = 30 Vdc, I_B = 0)	I_{CEO}	–	100	µAdc
Collector Cutoff Current	I_{CEX}			
(V_{CE} = 80 Vdc, $V_{BE(off)}$ = 1.5 Vdc)		–	1.0	µAdc
(V_{CE} = 40 Vdc, $V_{BE(off)}$ = 1.5 Vdc, T_C = 125°C		–	0.1	mAdc
Emitter Cutoff Current (V_{EB} = 6.0 Vdc, I_C = 0)	I_{EBO}	–	1.0	µAdc
ON CHARACTERISTICS (1)				
DC Current Gain	h_{FE}			
(I_C = 200 mAdc, V_{CE} = 3.0 Vdc)		40	250	
(I_C = 1.0 Adc, V_{CE} = 3.0 Vdc)		25	–	
(I_C = 2.0 Adc, V_{CE} = 3.0 Vdc)		20	–	
(I_C = 4.0 Adc, V_{CE} = 3.0 Vdc)		5.0	–	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			Vdc
(I_C = 500 mAdc, I_B = 50 mAdc)		–	0.4	
(I_C = 1.0 Adc, I_B = 100 mAdc)		–	0.6	
(I_C = 2.0 Adc, I_B = 200 mAdc)		–	0.8	
(I_C = 4.0 Adc, I_B = 800 mAdc)		–	2.5	
Base-Emitter Saturation Voltage (I_C = 2.0 Adc, I_B = 200 mAdc)	$V_{BE(sat)}$	–	1.8	Vdc
Base-Emitter on Voltage (I_C = 2.0 Adc, V_{CE} = 3.0 Vdc)	$V_{BE(on)}$	–	1.8	Vdc
DYNAMIC CHARACTERISTICS				
Current-Gain – Bandwidth Product (I_C = 100 mAdc, V_{CE} = 10 Vdc, f = 10 MHz)	f_T	50	–	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_C = 0) f = 0.1 MHz)	C_{ob}	–	50	pF
Small-Signal Current Gain (I_C = 200 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)	h_{fe}	10	–	–

*Indicates JEDEC Registered Data.

(1) Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2.0%