NTE ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

TIP42A, TIP42B, TIP42C
Silicon PNP Transistors
General Purpose Amp, Switch
TO–220 Type Package

Absolute Maximum Ratings: (T_C = +25°C, Note 1 unless otherwise specified)

Collector–Emitter Voltage, V_{CEO}
- TIP42A 60V
- TIP42B 80V
- TIP42C 100V

Collector–Base Voltage, V_{CBO}
- TIP42A 60V
- TIP42B 80V
- TIP42C 100V

Emitter–Base Voltage, V_{EBO} 5V

Continuous Current, I_C
- Continuous 6A
- Pulse 10A

Continuous Base Current, I_B 2A

Total Power Dissipation (T_C = +25°C), P_D 65W
- Derate Above 25°C . . . . . 0.52W/°C

Total Power Dissipation (T_A = +25°C), P_D 2W
- Derate Above 25°C . . . . . 0.016W/°C

Unclamped Inductive Load Energy (Note 2), E 62.5mJ

Operating Junction Temperature Range, T_J . . . . . –65° to +150°C

Storage Temperature Range, T_{stg} . . . . . –65° to +150°C

Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 1.67°C/W

Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 57°C/W

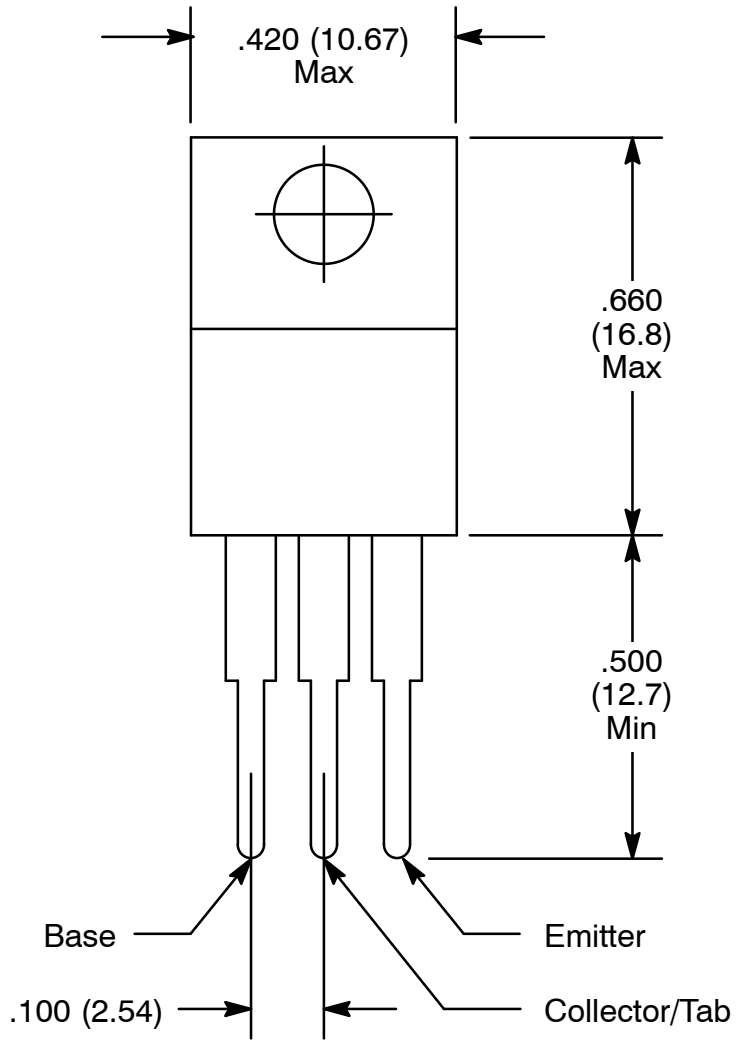
Note 1. Stresses exceeding Absolute Maximum Ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Note 2. I_C = 2.5A, L = 20mH, P.R.F = 10Hz, V_{CC} = 10V, R_{BE} = 100Ω.

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector−Emitter Sustaining Voltage TIP42A	$V_{CEO(sus)}$	I_C = 30mA, I_B = 0, Note 3	60	–	–	V
TIP42B			80	–	–	V
TIP42C			100	–	–	V
Collector Cutoff Current TIP42A	I_{CEO}	V_{CE} = 30V, I_B = 0	–	–	0.7	mA
TIP42B, TIP42C		V_{CE} = 60V, I_B = 0	–	–	0.7	mA
Collector Cutoff Current TIP42A	I_{CES}	V_{CE} = 60V, V_{EB} = 0	–	–	400	μA
TIP42B		V_{CE} = 80V, V_{EB} = 0	–	–	400	μA
TIP42C		V_{CE} = 100V, V_{EB} = 0	–	–	400	μA
Emitter Cutoff Current	I_{EBO}	V_{BE} = 5V, I_C = 0	–	–	1.0	mA
ON Characteristics (Note 3)						
DC Current Gain	h_{FE}	V_{CE} = 4V, I_C = 0.3A	30	–	–	
		V_{CE} = 4V, I_C = 3.0A	15	–	75	
Collector−Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 6A, I_B = 600mA	–	–	1.5	V
Base−Emitter ON Voltage	$V_{BE(on)}$	V_{CE} = 4V, I_C = 6A	–	–	2.0	V
Dynamic Characteristics						
Current−Gain − Bandwidth Product	f_T	V_{CE} = 10V, I_C = 0.5A, f_{test} = 1MHz	3.0	–	–	MHz
Small−Signal Current Gain	h_{fe}	V_{CE} = 10V, I_C = 0.5A, f = 1kHz	20	–	–	

Note 3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.


.420 (10.67)
Max
.660
(16.8)
Max
.500
(12.7)
Min
Base
Emitter
.100 (2.54)
Collector/Tab