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TIP41, TIP41A, TIP41B, TIP41C (NPN); TIP42, TIP42A, TIP42B, TIP42C (PNP)

Complementary Silicon Plastic Power Transistors

Designed for use in general purpose amplifier and switching applications.

Features

ESD Ratings:

Machine Model, C; > 400 V

Human Body Model, 3B; > 8000 V

• Epoxy Meets UL 94 V-0 @ 0.125 in

Pb-Free Packages are Available*

6 AMPERE COMPLEMENTARY SILICON POWER TRANSISTORS 40-60-80-100 VOLTS, **65 WATTS**

MAXIMUM RATINGS

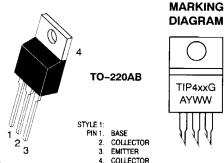
Rating	Symbol	Value	Unit
Collector-Emitter Voltage TIP41, TIP42 TIP41A, TIP42A TIP41B, TIP42B TIP41C, TIP42C	V _{CEO}	40 60 80 100	Vdc
Collector-Base Voltage TIP41, TIP42 TIP41A, TIP42A TIP41B, TIP42B TIP41C, TIP42C	V _{CB}	40 60 80 100	Vdc
Emitter-Base Voltage	V _{EB}	5.0	Vdc
Collector Current- Continuous Peak	Ic	6.0 10	Adc
Base Current	Ι _Β	2.0	Adc
Total Power Dissipation @ T _C = 25°C Derate above 25°C	P _D	65 0.52	W W/°C
Total Power Dissipation @ T _A = 25°C Derate above 25°C	P _D	2.0 0.016	W W/°C
Unclamped Inductive Load Energy (Note 1)	E	62.5	mJ
Operating and Storage Junction, Temperature Range	T _J , T _{stg}	−65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Case	R _{eJC}	1.67	°C/W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	57	°C/W

Stresses exceeding 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.

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



TIP4xxG AYWW

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

TIP41, TIP41A, TIP41B, TIP41C (NPN); TIP42, TIP42A, TIP42B, TIP42C (PNP)

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

Characterist	ic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Sustaining Voltage (Note 2) ($I_C = 30 \text{ mAdc}$, $I_B = 0$)	TIP41, TIP42 TIP41A, TIP42A TIP41B, TIP42B TIP41C, TIP42C	V _{CEO(sus)}	40 60 80 100	- - -	Vdc
Collector Cutoff Current ($V_{CE} = 30 \text{ Vdc}$, $I_{B} = 0$) ($V_{CE} = 60 \text{ Vdc}$, $I_{B} = 0$)	TIP41, TIP41A, TIP42, TIP42A TIP41B, TIP41C, TIP42B, TIP42C	I _{CEO}	-	0.7 0.7	mAdc
Collector Cutoff Current $ \begin{aligned} &(V_CE = 40 \; Vdc, \; V_EB = 0) \\ &(V_CE = 60 \; Vdc, \; V_EB = 0) \\ &(V_CE = 80 \; Vdc, \; V_EB = 0) \\ &(V_CE = 100 \; Vdc, \; V_EB = 0) \end{aligned} $, TIP41, TIP42 TIP41A, TIP42A TIP41B, TIP42B TIP41C, TIP42C	loes	- - - -	400 400 400 400	μAdc
Emitter Cutoff Current (V _{BE} = 5.0 Vdc, I _C = 0)		I _{EBO}	-	1.0	mAdc
ON CHARACTERISTICS (Note 2)					
DC Current Gain (I_C = 0.3 Adc, V_{CE} = 4.0 Vdc) (I_C = 3.0 Adc, V_{CE} = 4.0 Vdc)		h _{FE}	30 15	- 75	_
Collector-Emitter Saturation Voltage (I _C = 6.0 A	dc, I _B = 600 mAdc)	V _{CE(sat)}	-	1.5	Vdc
Base-Emitter On Voltage (I _C = 6.0 Adc, V _{CE} = 4.0 Vdc)		V _{BE(on)}	-	2.0	Vdc
DYNAMIC CHARACTERISTICS					
Current-Gain — Bandwidth Product (I _C = 500 mAdc, V _{CE} = 10 Vdc, f _{test} = 1.0 MHz)		f _T	3.0		MHz
Small-Signal Current Gain (I _C = 0.5 Adc, V _{CF} = 10 Vdc, f = 1.0 kHz)		h _{fe}	20	-	_