Darlington Silicon PNP Power Transistors

T-33-31

TIP125 TIP126 TIP127

TO-220 Package

Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	TIP125	TIP126	TIP127	Unit
Collector-Base Voltage	$-V_{CBO}$	60	80	100	V
Collector-Emitter Voltage	$-V_{CEO}$	60	80	100	V
Emitter-Base Voltage	$-V_{EBO}$		5		V
Collector Current	$-I_C$		5		A
Peak Collector Current	$-I_{CM}$		8		A
Base Current	$-I_B$		0.1		A
Power Dissipation (Tc=25°C)	P_C		65		W
Junction Temperature	Tj		−65~+150		°C
Storage Temperature	Tstg		−65~+150		°C

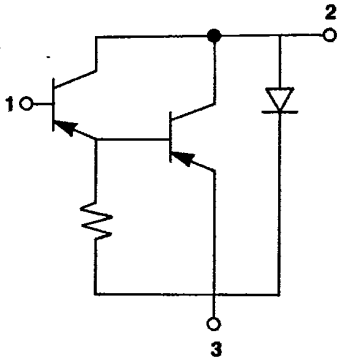
Applications:
- Power Amplifier and High Speed Switching
- Complementary pair with TIP120, TIP121, TIP122

Features:
- 65W at 25°C case temperature
- Min. h_{FE} of 1000 at 3V, 3A
- 5A rated collector Current
- 50mJ reverse energy ratings

Electrical Characteristics (Ta=25°C)

Item	Symbol	Condition	TIP125 min.	TIP125 max.	TIP126 min.	TIP126 max.	TIP127 min.	TIP127 max.	Unit
Collector-Emitter Voltage	$-V_{CEO}$	$-I_C$=30mA, I_B=0	60		80		100		V
Collector Cutoff Current	$-I_{CEO}$	$-V_{CE}$=30V, I_B=0		0.5					mA
		$-V_{CE}$=40V, I_B=0				0.5			
		$-V_{CE}$=50V, I_B=0						0.5	
Collector Cutoff Current	$-I_{CBO}$	$-V_{CB}$=60V, I_E=0		0.2					mA
		$-V_{CB}$=80V, I_E=0				0.2			
		$-V_{CB}$=100V, I_E=0						0.2	
Emitter-Base Current	$-I_{EBO}$	$-V_{EB}$=5V, I_C=0		2		2		2	mA
DC Current Gain	h_{FE}	$-V_{CE}$=3V, $-I_C$=0.5A	1000		1000		1000		
		$-V_{CE}$=3V, $-I_C$=3A	1000		1000		1000		
Base-Emitter Voltage	$-V_{BE}$	$-V_{CE}$=3V, $-I_C$=3A		2.5		2.5		2.5	V
Collector-Emitter Saturation Voltage	$-V_{CE(sat)}$	$-I_C$=3A, $-I_B$=12mA		2		2		2	V
		$-I_C$=5A, $-I_B$=20mA		4		4		4	
Turn-on Time	t_{on}	$-I_C$=3A, $-I_{B1}$=12mA, I_{B2}=12mA	0.2 (typ.)						μs
Turn-off Time	t_{off}	$V_{BE(off)}$=5V, R_L=10Ω	2 (typ.)						

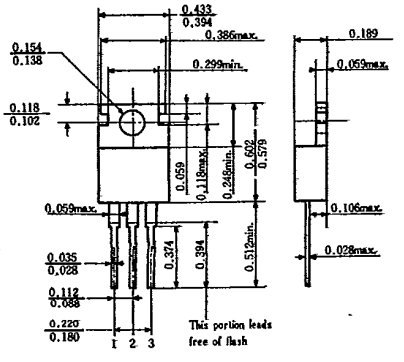
The device specifications are subject to change without prior notice.



1: Base
2: Collector
3: Emitter

THE COLLECTOR IS IN ELECTRICAL CONTACT WITH THE MOUNTING TAB

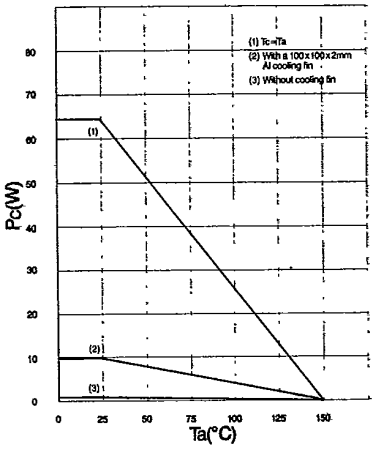
Unit: inch



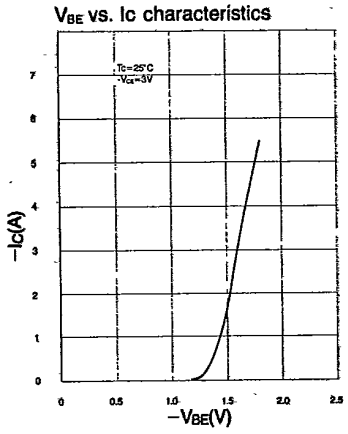
TIP125 TIP126 TIP127

Typical Characteristics

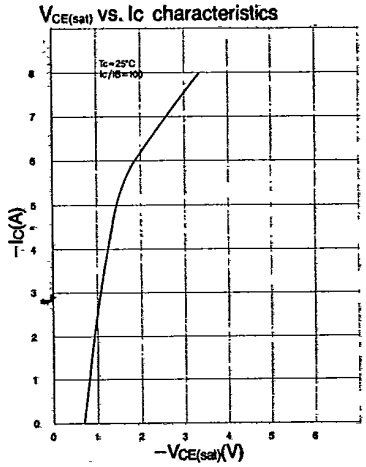
Pc vs. Ta characteristics



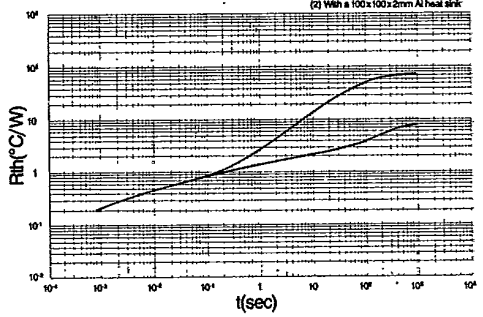
V_{BE} vs. Ic characteristics



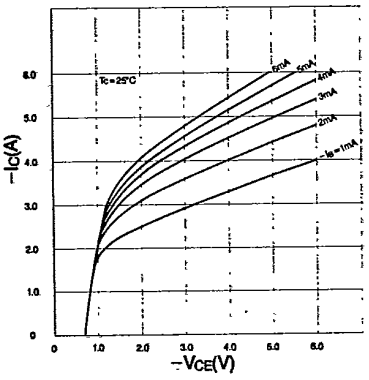
$V_{CE(sat)}$ vs. Ic characteristics



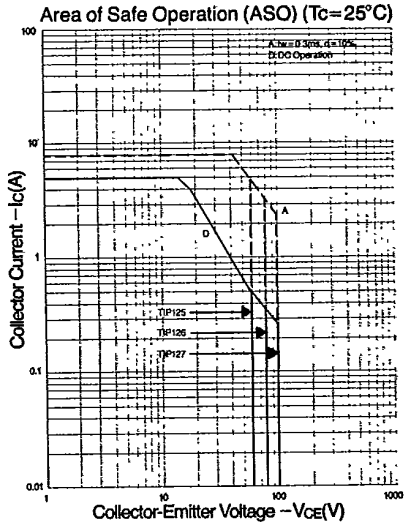
Thermal Resistance vs. t



V_{CE} vs. Ic characteristics



Area of Safe Operation (ASO) (Tc=25°C)



h_{FE} vs Ic characteristics