Micro Commercial Components
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TIP29,A,B,C(NPN)
TIP30,A,B,C(PNP)

1.0 Amp Complementary Silicon Power Transistors

Features

- Mounting Torgue: 5 in-lbs Maximum
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Marking: Type Number
- $R_{th(jc)}$ is 4.167°C/W, $R_{th(ja)}$ is 62.5°C/W
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1

Maximum Ratings

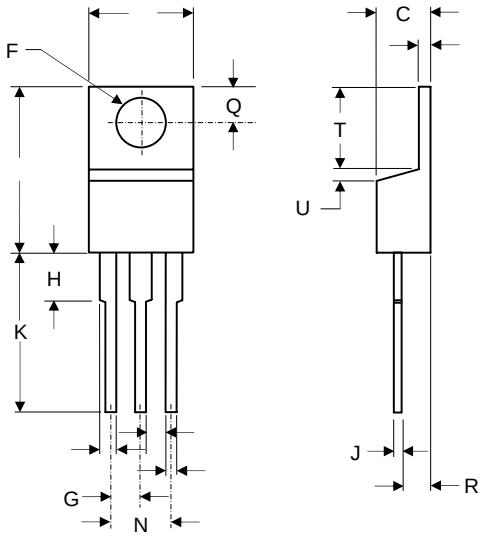
Symbol	Rating		Rating	Unit
V_{CEO}	Collector-Emitter Voltage	TIP29, TIP30	40	V
		TIP29A, TIP30A	60	
V_{CBO}	Collector-Base Voltage	TIP29B, TIP30B	80	
		TIP29C, TIP30C	100	
V_{EB}	Emitter-Base Voltage		5.0	V
I_C	Collector Current- Continuous Peak (1)		1.0 3.0	A
I_B	Base Current-Continuous		0.4	A
P_D	Total power dissipation @T_C=25°C Derate above 25°C		30 0.24	W W/°C
T_J,	Junction Temperature		-55 to +150	°C
T_{STG}	Storage Temperature		-55 to +150	°C

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (note 2) (I_C=30mAdc, I_B=0) TIP29, TIP30	40	---	Vdc
	TIP29A, TIP30A	60	---	
	TIP29B, TIP30B	80	---	
	TIP29C, TIP30C	100	---	
I_{EBO}	Emitter-Base Cutoff Current (V_{EB}=5.0Vdc, I_C=0)	---	1.0	mAdc
I_{CES}	Collector Cutoff Current			uAdc
	(V_{CE}=40V, V_{EB}=0) TIP29, TIP30	---	200	
	(V_{CE}=60V, V_{EB}=0) TIP29A, TIP30A	---	200	
	(V_{CE}=80V, V_{EB}=0) TIP29B, TIP30B	---	200	
	(V_{CE}=100V, V_{EB}=0) TIP29C, TIP30C	---	200	
I_{CEO}	Collector Cutoff Current (V_{CE}=30Vdc, I_B=0)	---	0.3	mAdc
	TIP29, TIP29A, TIP30, TIP30A (V_{CE}=60Vdc, I_B=0)	---	0.3	
	TIP29B, TIP29C, TIP30B, TIP30C			
ON CHARACTERISTICS (2)				
$h_{FE(1)}$	DC Current Gain (I_C=0.2Adc, V_{CE}=4.0Vdc)	40	---	----
	(I_C=1.0Adc, V_{CE}=4.0Vdc)	15	75	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=1.0Adc, I_B=125mAdc)	---	0.7	Vdc
$V_{BE(ON)}$	Base-Emitter On Voltage (I_C=1.0Adc,V_{CE}=4.0Adc)	---	1.3	Vdc
f_T	Current-Gain-Bandwidth Product (note 3) (I_C=200mAdc, V_{CE}=10Vdc, f=1.0MHz)	3.0	---	MHz
h_{fe}	Small-Signal Current Gain (I_C=0.2Adc, V_{CE}=10Vdc, f=1.0KHz)	20	---	---

Notes:1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.
2. Pulse Test: Pulse Width=300us, Duty Cycle <2.0%
3. $f_T = |h_{fe}| \times f_{test}$

TO-220



PIN 1. BASE
PIN 2. COLLECTOR
PIN 3. EMITTER

DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.560	.625	14.22	15.88	
B	.380	.420	9.65	10.67	
C	.140	.190	3.56	4.82	
D	.020	.045	0.51	1.14	
F	.139	.161	3.53	4.09	∅
G	.190	.110	2.29	2.79	
H	---	.250	---	6.35	
J	.012	.025	0.30	0.64	
K	.500	.580	12.70	14.73	
L	.045	.060	1.14	1.52	
N	.190	.210	4.83	5.33	
Q	.100	.135	2.54	3.43	
R	.080	.115	2.04	2.92	
S	.045	.055	1.14	1.39	
T	.230	.270	5.84	6.86	
U	-----	.050	-----	1.27	
V	.045	-----	1.15	-----	

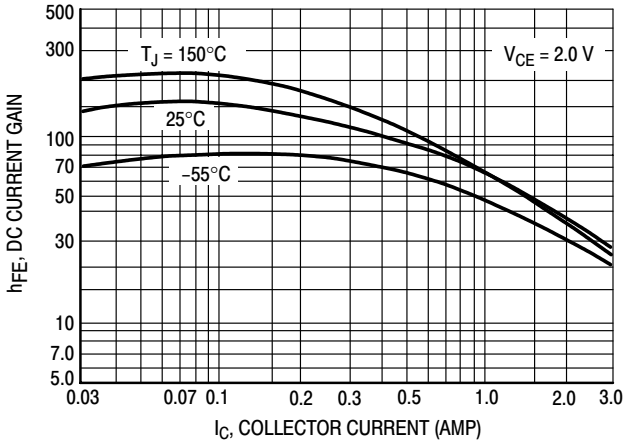


Figure 1. DC Current Gain

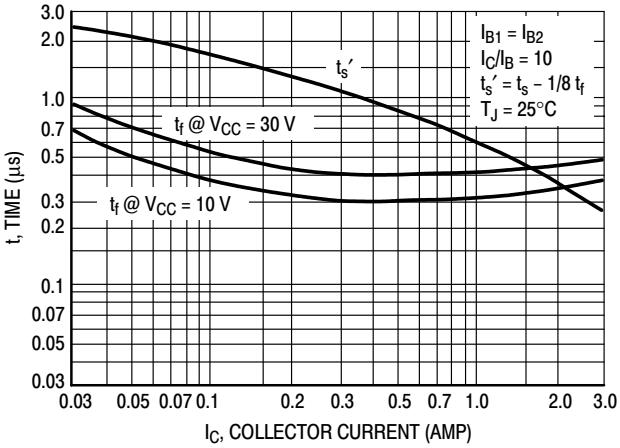


Figure 2. Turn–Off Time

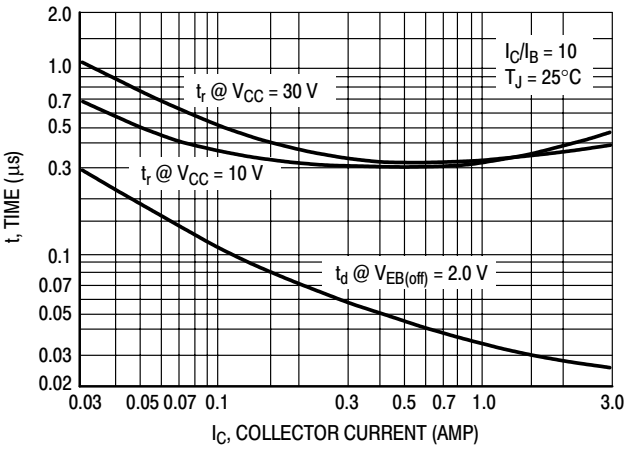


Figure 3. Turn–On Time

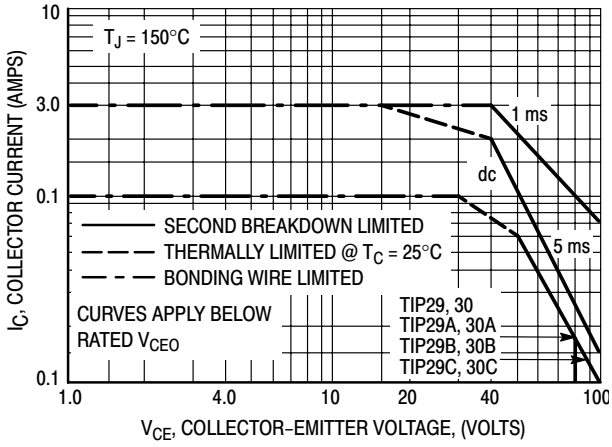


Figure 4. Active Region Safe Operating Area

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Ordering Information :

Device	Packing
Part Number-BP	Bulk;1Kpcs/Box

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