Micro Commercial Components
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TIP100
TIP101
TIP102

NPN Plastic Medium-Power Silicon Transistors

Features

- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- High DC Current Gain : h_{FE}=2500 (Typ) @ I_C=4.0Adc
- Low Collector-Emitter Saturation Voltage
- Monolithic Construction with Built-in Base-Emitter Shunt Resistors
- TO-220 Compact package
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1

Maximum Ratings

Symbol	Parameter		Rating	Unit
V_{CEO}	Collector-Emitter Voltage	TIP100 TIP101 TIP102	60 80 100	V
V_{CBO}	Collector-Base Voltage	TIP100 TIP101 TIP102	60 80 100	V
V_{EBO}	Emitter-Base Voltage		5.0	V
I_C	Collector Current-continuous		8.0	A
I_{CP}	Collector Current-peak		15	A
I_B	Base Current		1.0	A
P_D	Collector Dissipation @T_C=25^{O}C Derate above 25 ^{O}C		80 0.64	W W/ ^{O}C
T_J,	Junction Temperature		-55 to +150	^{O}C
T_{STG}	Storage Temperature		-55 to +150	^{O}C

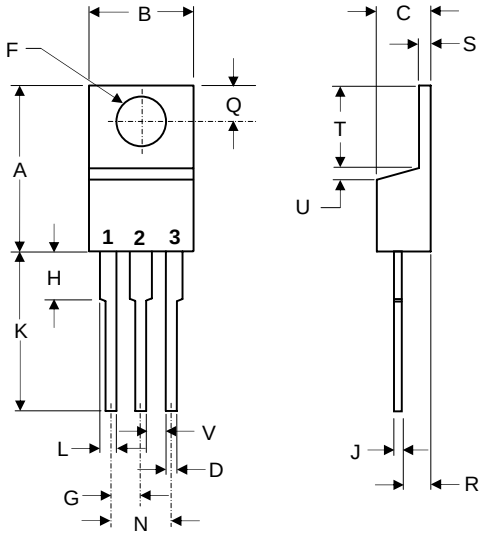
Electrical Characteristics @ 25^{0}C Unless Otherwise Specified

Symbol	Parameter		Min	Max	Units
OFF CHARACTERISTICS					
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (I_C=30mAdc, I_B=0)	TIP100 TIP101 TIP101	60 80 100	--- --- ---	Vdc
I_{CEO}	Collector Cut-off Current (V_{CE}=30Vdc, I_B=0) (V_{CE}=40Vdc, I_B=0) (V_{CE}=50Vdc, I_B=0)	TIP100 TIP101 TIP102	--- --- ---	50 50 50	uAdc
I_{CBO}	Collector Cut-off Current (V_{CB}=60Vdc, I_E=0) (V_{CB}=80Vdc, I_E=0) (V_{CB}=100Vdc, I_E=0)	TIP100 TIP101 TIP102	--- --- ---	50 50 50	uAdc
I_{EBO}	Emitter Cut-off Current (V_{BE}=5.0Vdc, I_C=0)		---	8.0	mAdc
ON CHARACTERISTICS (1)					
$h_{FE(1)}$	DC Current Gain (I_C=3.0Adc, V_{CE}=4.0Vdc) (I_C=8.0Adc, V_{CE}=4.0Vdc)		1000 200	20000 ---	----
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=3.0Adc, I_B=6.0mAdc) (I_C=8.0Adc, I_B=80mAdc)		--- ---	2.0 2.5	Vdc
$V_{BE(ON)}$	Base-Emitter On Voltage (I_C=8.0Adc,V_{CE}=4.0Adc)		---	2.8	Vdc
hfe	Small-Signal Current Gain (I_C=3.0Adc,V_{CE}=4.0Vdc,f=1.0MHz)		4.0	---	---
C_{ob}	Output Capacitance (V_{CB}=10V, I_E=0, f=0.1MHz)		---	200	pF

(1) Pulse Test: Pulse Width<300us, Duty Cycle<2%

Notes:1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.

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	-----	

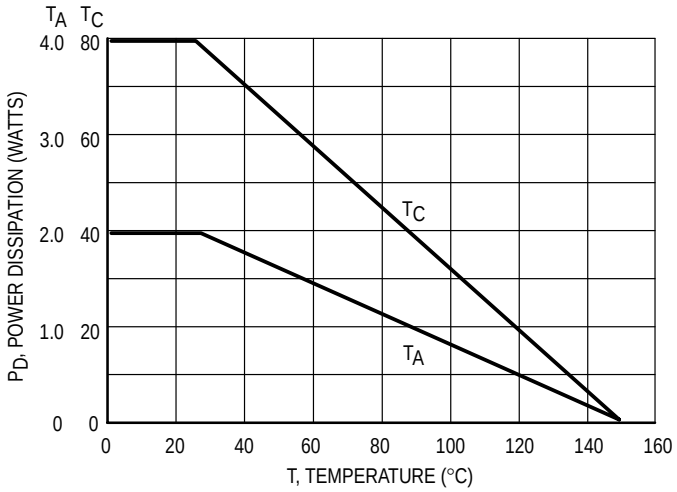


Figure 1. Power Derating

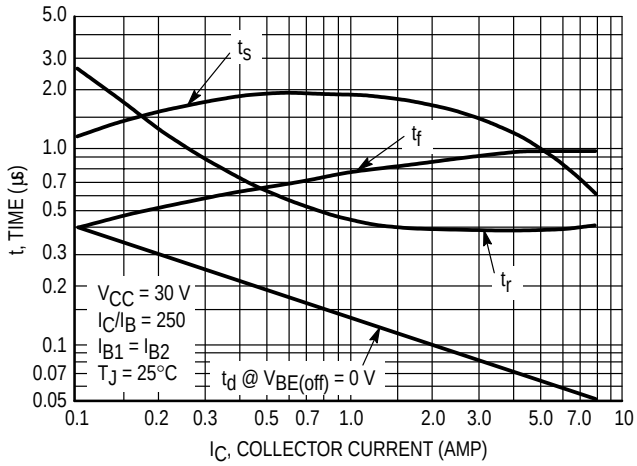


Figure 2. Switching Times

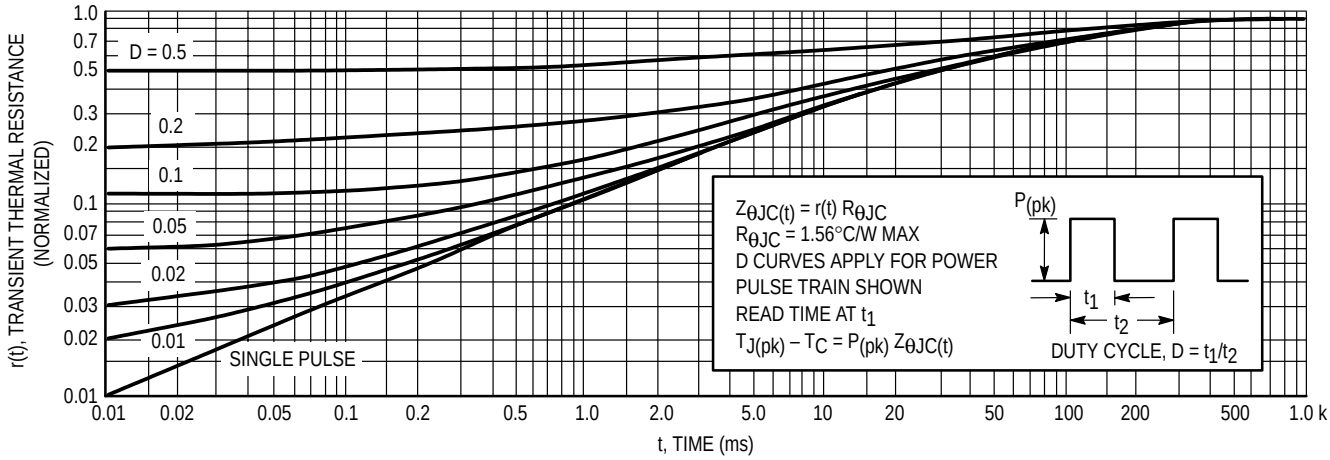


Figure 3. Thermal Response

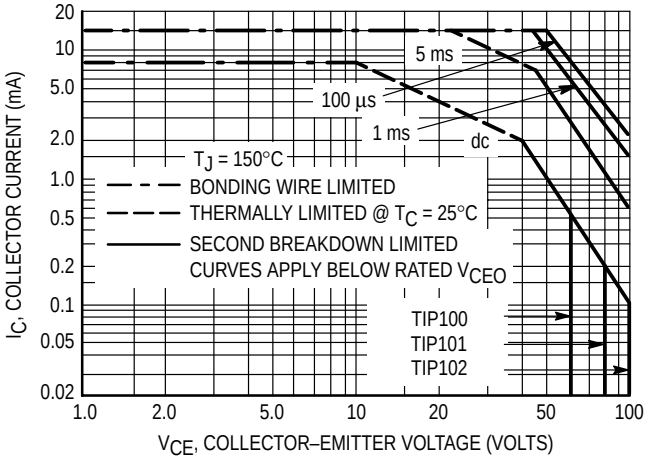


Figure 4. Active–Region Safe Operating Area

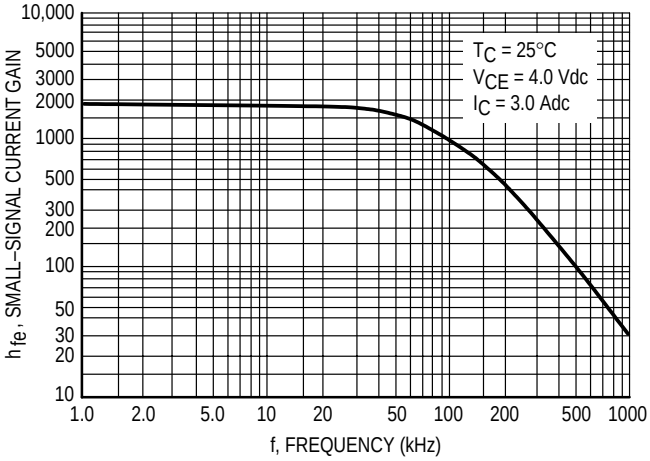


Figure 5. Small–Signal Current Gain

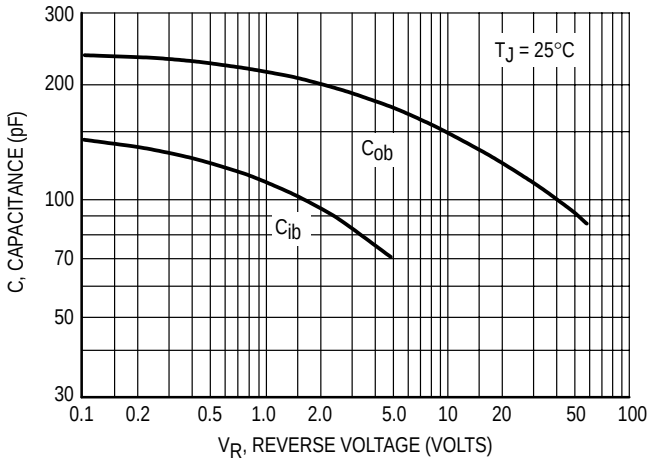


Figure 6. Capacitance

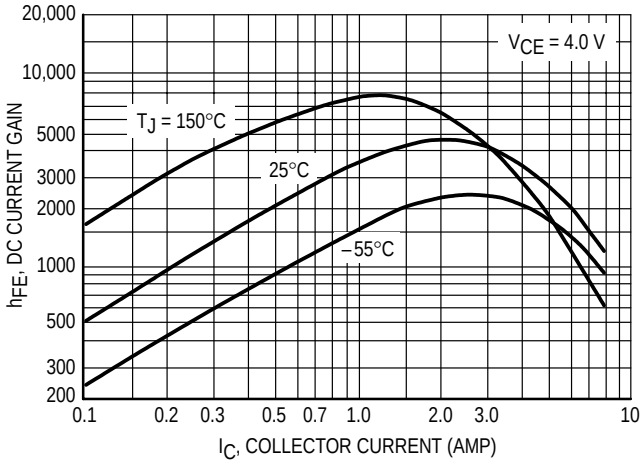


Figure 7. DC Current Gain

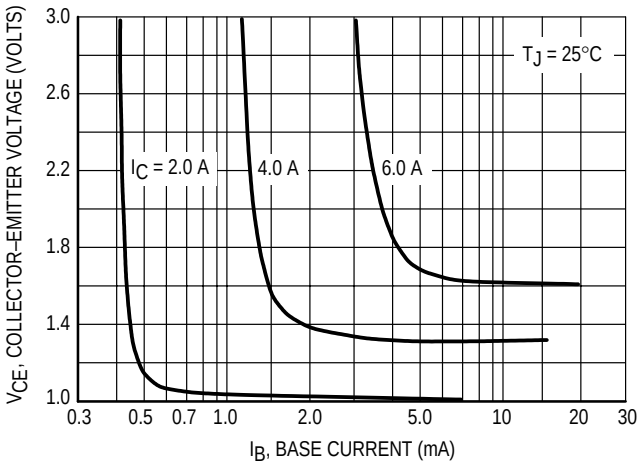


Figure 8. Collector Saturation Region

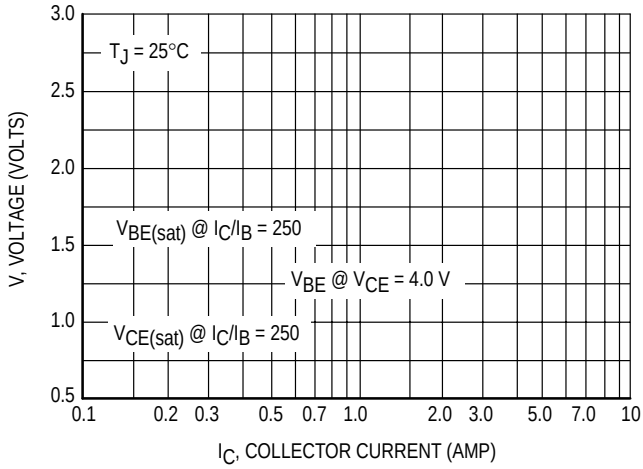


Figure 9. "On" Voltages

Ordering Information

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