



Micro Commercial Components

Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

Features

- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- High DC Current Gain : $h_{FE}=2500$ (Typ) @ $I_C=4.0A_{dc}$
- Low Collector-Emitter Saturation Voltage
- Monolithic Construction with Built-in Base-Emitter Shunt Resistors
- TO-220 Compact package
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings

Symbol	Parameter	Rating	Unit	
V_{CEO}	Collector-Emitter Voltage	TIP100	60	V
		TIP101	80	
		TIP102	100	
V_{CBO}	Collector-Base Voltage	TIP100	60	V
		TIP101	80	
		TIP102	100	
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 @ $T_C=25^\circ C$ Derate above $25^\circ C$	80	W	
		0.64	W/ $^\circ C$	
T_J	Junction Temperature	-55 to +150	$^\circ C$	
T_{STG}	Storage Temperature	-55 to +150	$^\circ C$	

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
--------	-----------	-----	-----	-------

OFF CHARACTERISTICS

$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage ($I_C=30mA_{dc}$, $I_B=0$)	TIP100	60	---	Vdc
		TIP101	80	---	
		TIP102	100	---	
I_{CEO}	Collector Cut-off Current ($V_{CE}=30V_{dc}$, $I_B=0$) ($V_{CE}=40V_{dc}$, $I_B=0$) ($V_{CE}=50V_{dc}$, $I_B=0$)	TIP100	---	50	uAdc
		TIP101	---	50	
		TIP102	---	50	
I_{CBO}	Collector Cut-off Current ($V_{CB}=60V_{dc}$, $I_E=0$) ($V_{CB}=80V_{dc}$, $I_E=0$) ($V_{CB}=100V_{dc}$, $I_E=0$)	TIP100	---	50	uAdc
		TIP101	---	50	
		TIP102	---	50	
I_{EBO}	Emitter Cut-off Current ($V_{BE}=5.0V_{dc}$, $I_C=0$)	---	8.0	mAdc	

ON CHARACTERISTICS (1)

$h_{FE(1)}$	DC Current Gain ($I_C=3.0A_{dc}$, $V_{CE}=4.0V_{dc}$) ($I_C=8.0A_{dc}$, $V_{CE}=4.0V_{dc}$)	1000 200	20000 ---	----
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=3.0A_{dc}$, $I_B=6.0mA_{dc}$) ($I_C=8.0A_{dc}$, $I_B=80mA_{dc}$)	---	2.0 2.5	Vdc
$V_{BE(ON)}$	Base-Emitter On Voltage ($I_C=8.0A_{dc}$, $V_{CE}=4.0A_{dc}$)	---	2.8	Vdc
hfe	Small-Signal Current Gain ($I_C=3.0A_{dc}$, $V_{CE}=4.0V_{dc}$, $f=1.0MHz$)	4.0	---	---
C_{ob}	Output Capacitance ($V_{CB}=10V$, $I_E=0$, $f=0.1MHz$)	---	200	pF

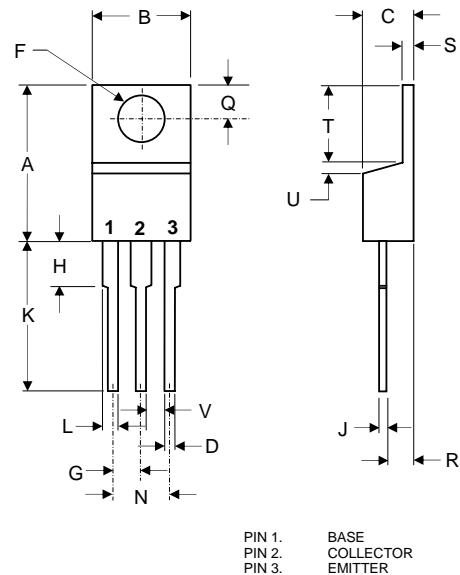
(1) Pulse Test: Pulse Width<300us, Duty Cycle<2%

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

TIP100
TIP101
TIP102

NPN Plastic
Medium-Power
Silicon Transistors

TO-220



DIM	DIMENSIONS				NOTE
	INCHES		MM		
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	-----	

www.mccsemi.com

TIP100,101,102

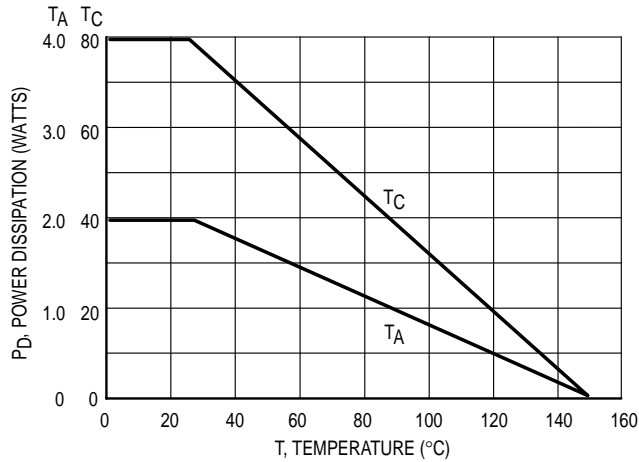


Figure 1. Power Derating

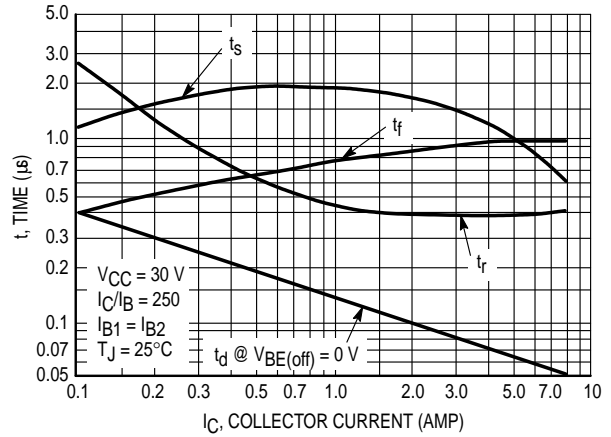


Figure 2. Switching Times

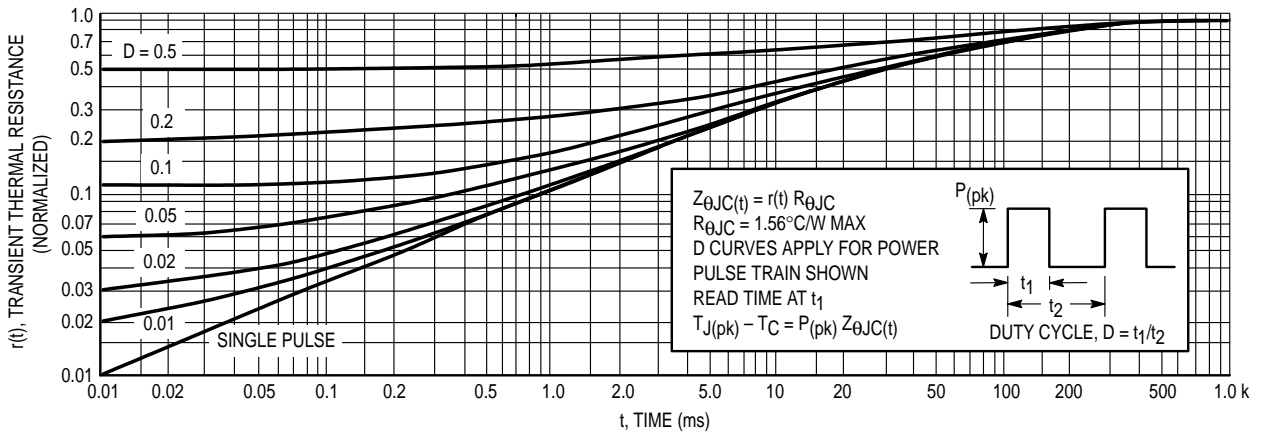


Figure 3. Thermal Response

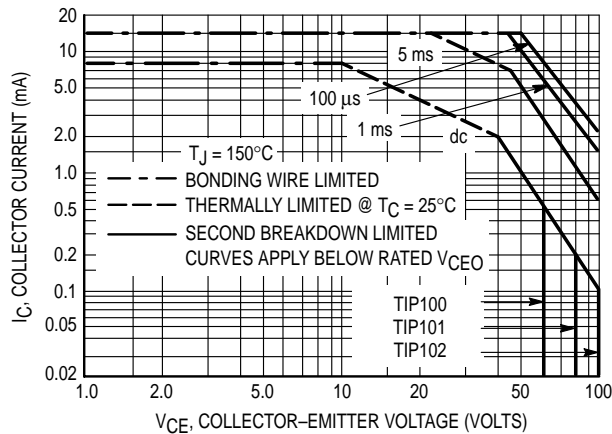


Figure 4. Active-Region Safe Operating Area

TIP100,101,102



Micro Commercial Components

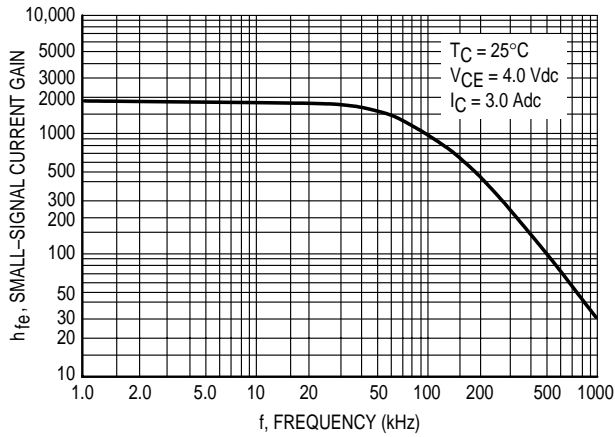


Figure 5. Small-Signal Current Gain

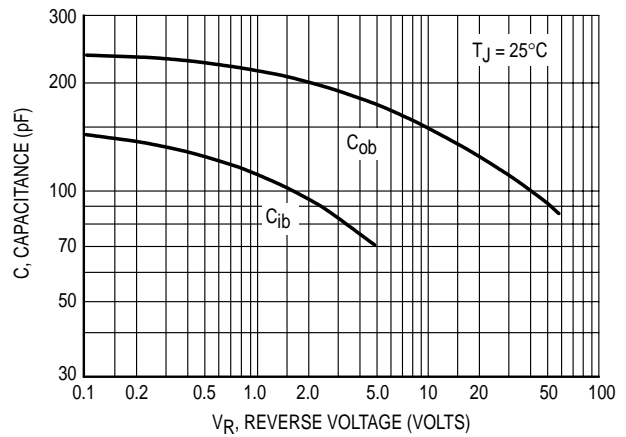


Figure 6. Capacitance

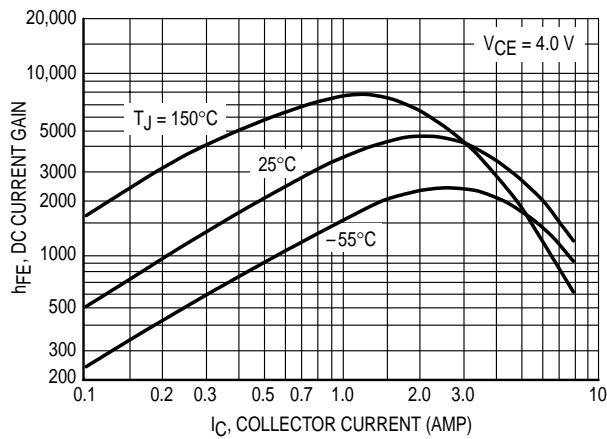


Figure 7. DC Current Gain

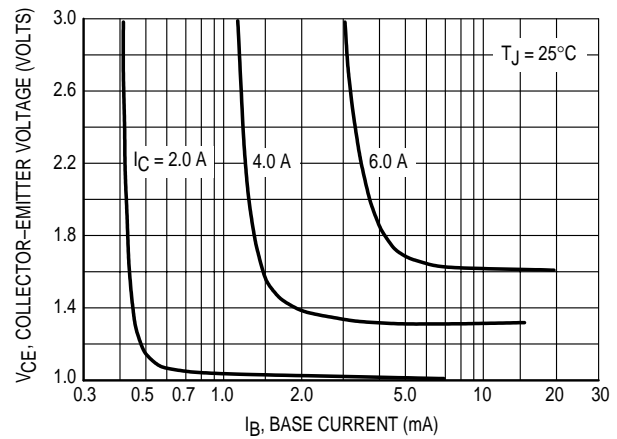


Figure 8. Collector Saturation Region

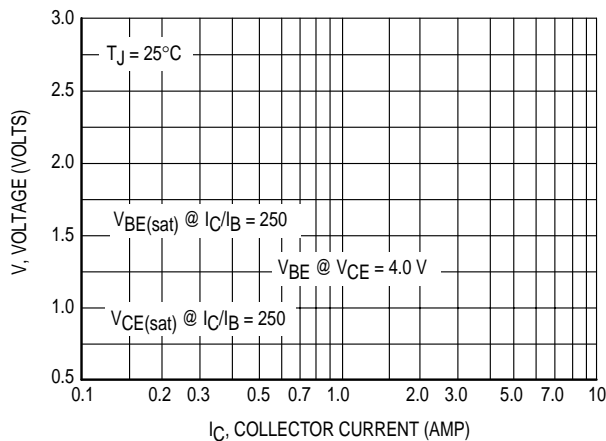


Figure 9. "On" Voltages



Micro Commercial Components

Ordering Information :

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

*****IMPORTANT NOTICE*****

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp .** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp .** and all the companies whose products are represented on our website, harmless against all damages.

*****LIFE SUPPORT*****

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

*****CUSTOMER AWARENESS*****

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

www.mccsemi.com