

TIP115 TIP116 TIP117

Features

- Halogen free available upon request by adding suffix "-HF"
- High DC Current Gain : $h_{FE}=1000$ @ $V_{CE}=4.0V$, $I_C=1.0A$ (Min.)
- Low Collector-Emitter Saturation Voltage
- Complementary to TIP110/111/112
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings

- Mounting Torque: 5 in-lbs Maximum

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	TIP115	60
		TIP116	80
		TIP117	100
V_{CBO}	Collector-Base Voltage	TIP115	60
		TIP116	80
		TIP117	100
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current (DC)	2.0	A
I_{CP}	Collector Current (Pulse)	4.0	A
I_B	Base Current (DC)	50	mA
P_C	Collector Dissipation @ $T_A=25^\circ C$	2.0	W
	Collector Dissipation @ $T_C=25^\circ C$	50	W
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
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OFF CHARACTERISTICS

$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage ($I_C=30mA$, $I_B=0$)	TIP115	60	---	Vdc
		TIP116	80	---	
		TIP117	100	---	
I_{CEO}	Collector Cut-off Current ($V_{CE}=30Vdc$, $I_B=0$) ($V_{CE}=40Vdc$, $I_B=0$) ($V_{CE}=50Vdc$, $I_B=0$)	TIP115	---	2.0	mA
		TIP116	---	2.0	
		TIP117	---	2.0	
I_{CBO}	Collector Cut-off Current ($V_{CB}=60Vdc$, $I_E=0$) ($V_{CB}=80Vdc$, $I_E=0$) ($V_{CB}=100Vdc$, $I_E=0$)	TIP115	---	1.0	mA
		TIP116	---	1.0	
		TIP117	---	1.0	
I_{EBO}	Emitter Cut-off Current ($V_{BE}=5.0Vdc$, $I_C=0$)	---	2.0	mA	

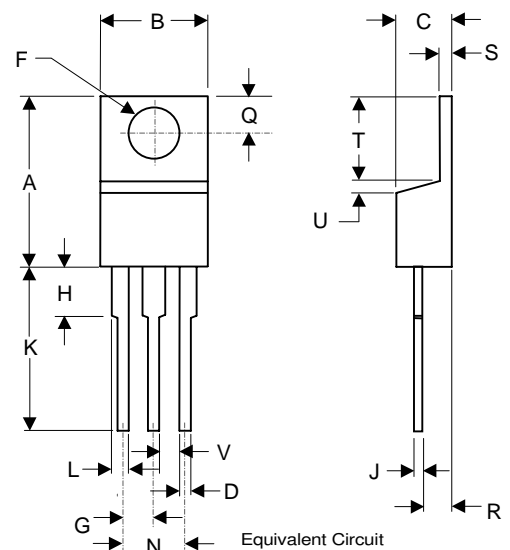
ON CHARACTERISTICS

$h_{FE(1)}$	DC Current Gain ($I_C=1.0A$, $V_{CE}=4.0Vdc$) ($I_B=2.0A$, $V_{CE}=4.0Vdc$)	1000	---	---
		500	---	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=2.0A$, $I_B=8.0mA$)	---	2.5	Vdc
$V_{BE(ON)}$	Base-Emitter On Voltage ($I_C=2.0A$, $V_{CE}=4.0A$)	---	2.8	Vdc
C_{ob}	Output Capacitance ($V_{CB}=10V$, $I_E=0$, $f=0.1MHz$)	---	200	pF

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

PNP Epitaxial Silicon Darlington Transistors

TO-220



- 1.Base
- 2.Collector
- 3.Emitter

$$R1 \cong 10 k\Omega$$

$$R2 \cong 0.6 k\Omega$$

DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
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	---	



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Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-BP-HF

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