



Micro Commercial Components

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TIP115 TIP116 TIP117

Features

- 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(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1

Maximum Ratings

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

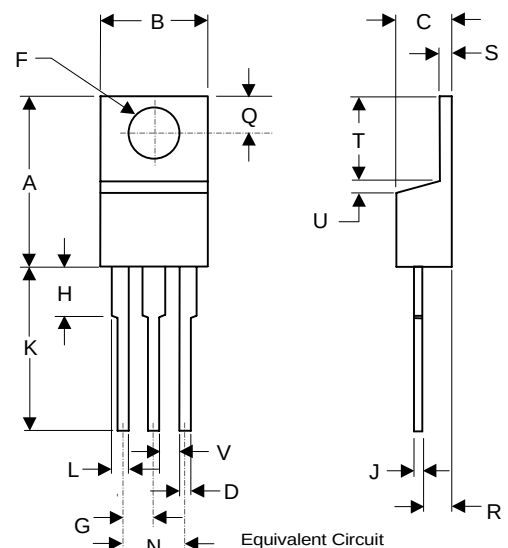
ON CHARACTERISTICS

$h_{FE(1)}$	DC Current Gain ($I_C=1.0A$, $V_{CE}=4.0V$)	1000	---	----
	($I_B=2.0A$, $V_{CE}=4.0V$)	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 ($I_C=2.0A$, $V_{CE}=4.0V$)	---	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

$R1 \approx 10 k\Omega$
 $R2 \approx 0.6 k\Omega$

DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.595	.620	15.11	15.75	
B	.380	.405	9.65	10.29	
C	.160	.190	4.06	4.82	
D	.025	.035	0.64	0.89	
F	.142	.147	3.61	3.73	
G	.190	.210	4.83	5.33	
H	.110	.130	2.79	3.30	
J	.018	.025	0.46	0.64	
K	.500	.562	12.70	14.27	
L	.045	.060	1.14	1.52	
Q	.100	.120	2.54	3.04	
R	.080	.110	2.04	2.79	
S	.045	.055	1.14	1.39	
T	.235	.255	5.97	6.48	
U	-----	.050	-----	1.27	