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TIP115
TIP116
TIP117

PNP Epitaxial Silicon Darlington Transistors

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

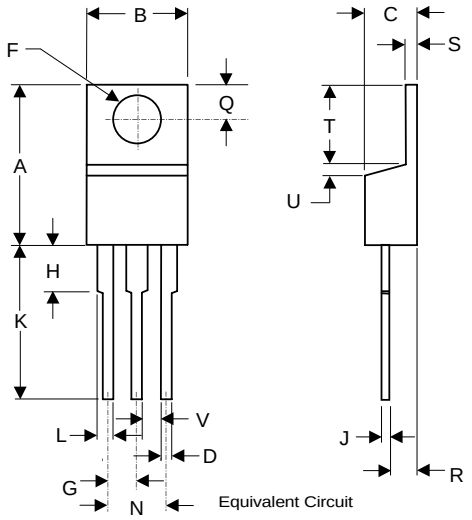
Symbol	Rating		Rating	Unit
V_{CEO}	Collector-Emitter Voltage			
		TIP115	60	
		TIP116	80	V
		TIP117	100	
V_{CBO}	Collector-Base Voltage			
		TIP115	60	
		TIP116	80	V
		TIP117	100	
V_{EBO}	Emitter-Base Voltage		5.0	V
I_C	Collector Current (DC)		2.0	A
I_{CP}	Collector Current (Pulse)		4.0	A
I_B	Base Current (DC)		50	mA
P_C	Collector Dissipation @T_A=25°C		2.0	W
	Collector Dissipation @T_C=25°C		50	W
T_J,	Junction Temperature		-55 to +150	°C
T_{STG}	Storage Temperature		-55 to +150	°C

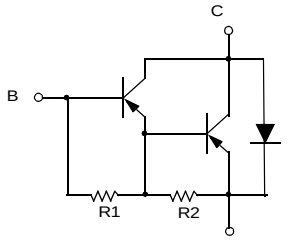
Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbl	Parameter		Min	Max	Units
OFF CHARACTERISTICS					
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage				
	(I_C=30mAdc, I_B=0)	TIP115	60	---	
		TIP116	80	---	Vdc
		TIP117	100	---	
I_{CEO}	Collector Cut-off Current				
	(V_{CE}=30Vdc, I_B=0)	TIP115	---	2.0	mAdc
	(V_{CE}=40Vdc, I_B=0)	TIP116	---	2.0	
	(V_{CE}=50Vdc, I_B=0)	TIP117	---	2.0	
I_{CBO}	Collector Cut-off Current				
	(V_{CB}=60Vdc, I_E=0)	TIP115	---	1.0	mAdc
	(V_{CB}=80Vdc, I_E=0)	TIP116	---	1.0	
	(V_{CB}=100Vdc, I_E=0)	TIP117	---	1.0	
I_{EBO}	Emitter Cut-off Current		---	2.0	mAdc
	(V_{BE}=5.0Vdc, I_C=0)				
ON CHARACTERISTICS					
$h_{FE(1)}$	DC Current Gain				
	(I_C=1.0Adc, V_{CE}=4.0Vdc)		1000	---	----
	(I_C=2.0Adc, V_{CE}=4.0Vdc)		500	---	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		---	2.5	Vdc
	(I_C=2.0Adc, I_B=8.0mAdc)				
$V_{BE(ON)}$	Base-Emitter On Voltage		---	2.8	Vdc
	(I_C=2.0Adc,V_{CE}=4.0Adc)				
C_{ob}	Output Capacitance		---	200	pF
	(V_{CB}=10V, I_E=0, f=0.1MHz)				

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

TO-220





Equivalent Circuit

1.Base
2.Collector
3.Emitter

$R1 \cong 10\,k\Omega$
$R2 \cong 0.6\,k\Omega$

DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
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	