NPN Silicon Power Darlington Transistor

Features

• Halogen and Antimony Free(HAF), RoHS compliant

Applications

• For power switching and amplifier

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	Vсво	100	V
Collector Emitter Voltage	VCEO	100	V
Emitter Base Voltage	Vebo	5	V
Collector Current	lc	5	А
Collector Current (Pulse)	I _{CP}	8	А
Base Current	lв	0.12	А
Power Dissipation (T _a = 25 °C)	Pc	2	W
Power Dissipation (T₀ = 25 ºC)	Pc	15.6	W
Junction Temperature	Tj	150	٥C
Storage Temperature Range	Tstg	- 65 to + 150	٥C

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Case	Rejc	8	°C/W
Thermal Resistance from Junction to Ambient	R _{0JA}	62.5	°C/W





1.Base 2.Colloctor 3.Emitter TO-220FB Plastic Package

Characteristics at $T_a = 25 \circ C$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 3 V$, $I_C = 0.5 A$ at $V_{CE} = 3 V$, $I_C = 3 A$	h _{FE}	1000 1000	-	
Collector Base Cutoff Current at V_{CB} = 100 V	Ісво	-	0.2	mA
Collector Emitter Cutoff Current at V _{CE} = 50 V	ICEO	-	0.5	mA
Emitter Base Cutoff Current at $V_{EB} = 5 V$	I _{EBO}	-	2	mA
Collector Base Breakdown Voltage at Ic = 1 mA	V _{(BR)CBO}	100	-	V
Collector Emitter Sustaining Voltage at Ic = 30 mA	$V_{CEO(sus)}$	100	-	V
Emitter Base Breakdown Voltage at I _E = 1 mA	V _{(BR)EBO}	5	-	V
Collector Emitter Saturation Voltage at $I_C = 3 A$, $I_B = 12 mA$ at $I_C = 5 A$, $I_B = 20 mA$	V _{CE(sat)}	-	2 4	V
Base Emitter On Voltage at V _{CE} = 3 V, I _C = 3 A	V _{BE(on)}	-	2.5	V



Electrical Characteristics Curves



Fig. 1 Output Characteristics Curve

Fig. 2 Collector Current vs. Base to Emitter Voltage



Fig. 3 DC Current Gain vs. Collector Current



Fig. 4 VBESAT vs. Collector Current





Electrical Characteristics Curves



Fig. 5 V_{CESAT} vs. Collector Current

Fig. 6 Output Capacitance

Fig 7. Power Derating Curve





Package Outline Dimensions (Units: mm)

TO-220FB





UNIT	Α	В	С	D	E	F	G	W	Н	H1	K	L	L1	Ν
	2.9	6.8	0.7	15	1.5	0.9	2.54	10.2	4.7	2.5	3.1	16.8	9.4	1.4
mm	2.7	6.4	0.3	11	1.1	0.7	TYP.	9.8	4.3	2.2	2.7	14.8	9.0	1.2

С

H1

UNIT	Р	P1	Q	
100 100	13.3	8.2	3.7	
	12.7	7.6	3.5	

Packing information

Package	Carton Quantity	Box Quantity	Base Quantity	Delivery Mode
TO-220FB	5 K / Carton	1 K / Box	50 pcs / Tube	Tube

Marking information	
" TIP122 " = Part No. " **** " = Date Code Marking	O TIP122 ****
Font type: Arial	

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5/5