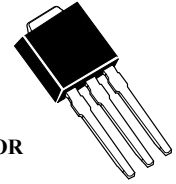


NPN PLASTIC ENCAPSULATE TRANSISTORS

 Lead(Pb)-Free

Features:

- * High DC current gain
- * Electrically similar to popular TIP122
- * Built-in a damper diode at E-C



1.BASE
2.COLLECTOR
3.EMITTER

TO-251

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	100	V
Collector-Emitter Voltage	V_{CE0}	100	V
Emitter-Base Voltage	V_{EB0}	5.0	V
Collector Current	I_C	5.0	A
Collector Power Dissipation @ $T_C=25^{\circ}\text{C}$ @ $T_A=25^{\circ}\text{C}$	P_D	20.0 1.5	W
Junction Temperature	T_j	+150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage $I_C=1\text{mA}$	BV_{CBO}	100	-	-	V
Collector-Emitter Breakdown Voltage $I_C=30\text{mA}$	BV_{CEO}	100	-	-	V
Emitter-Base Breakdown Voltage $I_E=3\text{mA}$	BV_{EBO}	5.0	-	-	V
Collector Cutoff Current $V_{CB}=100\text{V}$	I_{CBO}	-	-	10	μA
Collector Emitter Cutoff Current $V_{CE}=50\text{V}$	I_{CEO}	-	-	10	μA
Emitter Cutoff Current $V_{EB}=5.0\text{V}$	I_{EBO}	-	-	2	mA

ON CHARACTERISTICS

DC Current Gain $V_{CE}=4\text{V}, I_C=4\text{A}$ $V_{CE}=4\text{V}, I_C=8\text{A}$	$h_{FE(1)}$ $h_{FE(2)}$	1000 100	- -	12000 -	-
Collector-Emitter Saturation Voltage $I_C=4\text{A}, I_B=16\text{mA}$ $I_C=8\text{A}, I_B=80\text{mA}$	$V_{CE(sat)}$	-	-	2.0 4.0	V
Base-Emitter Saturation Voltage $I_C=8\text{A}, I_B=80\text{mA}$	$V_{BE(sat)}$	-	-	4.5	V
Base-Emitter On Voltage $V_{CE}=4\text{A}, I_C=4\text{A}$	$V_{(on)}$	-	-	2.8	V
Output Capacitance $V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$	C_{ob}	-	200	-	pF

Typical Characteristics

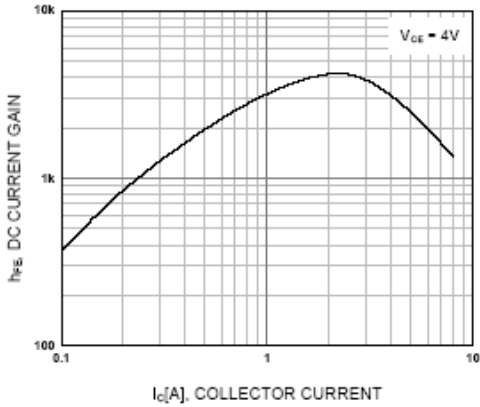


Figure 1. DC current Gain

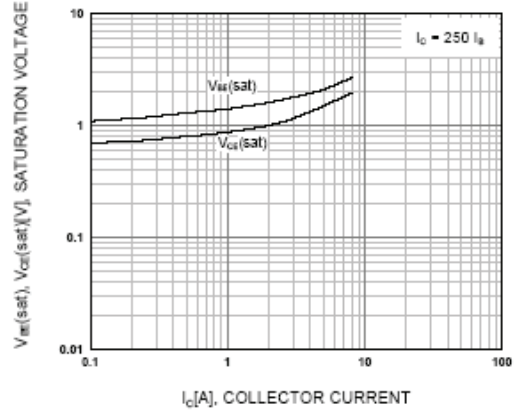


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

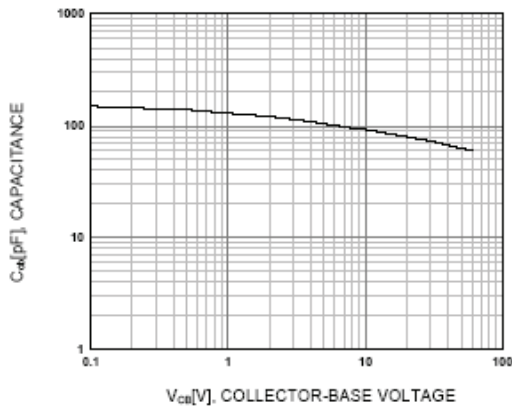


Figure 3. Collector Output Capacitance

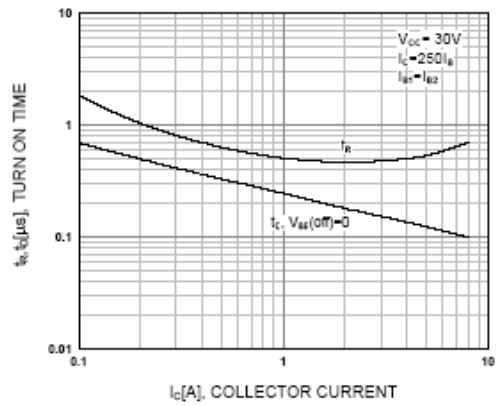


Figure 4. Turn On Time

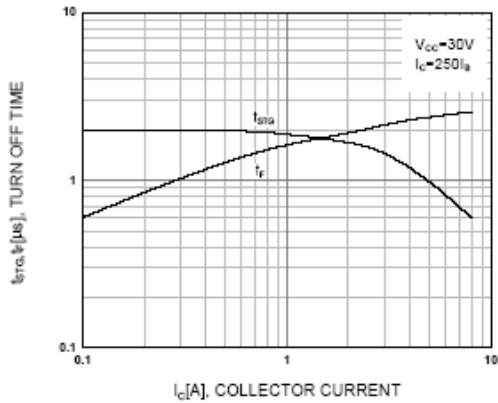


Figure 5. Turn Off Time

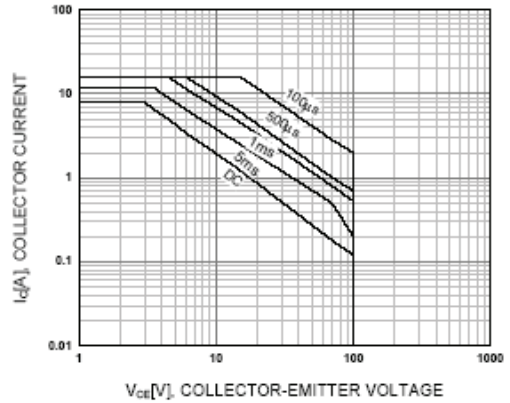
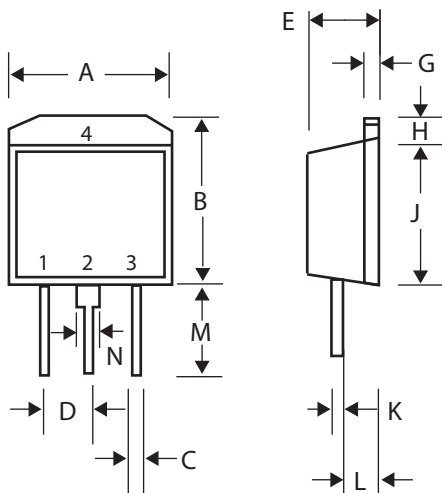


Figure 6. Safe Operating Area

TO-251 Outline Dimensions

unit:mm



TO-251		
Dim	Min	Max
A	6.40	6.80
B	6.80	7.20
C	0.50	0.80
D	-	2.30
E	2.20	2.50
G	0.45	0.55
H	1.00	1.60
J	5.40	5.80
K	0.45	0.69
L	0.90	1.50
M	6.50	-
N	-	0.90

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