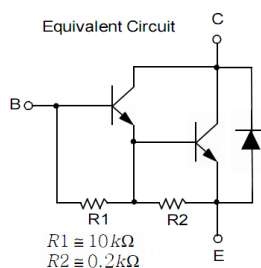


Applications

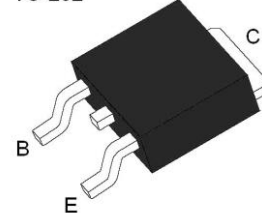
- Medium Power Linear Switching

Features

- High DC Current Gain
- Built-in a Damper Diode at E-C
- Electrically Similar to Popular TIP122
- Complementary to MJD127



TO-252



Absolute Maximum Rating ($T_A=25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector-base voltage	BV_{CBO}	100	V
Collector-emitter voltage	BV_{CEO}	100	V
Emitter-base voltage	BV_{EBO}	5	V
Collector current (DC)	I_C	8	A
Collector current (Pluse)	I_{CP}	8	A
Collector dissipation power	$T_A = 25^\circ\text{C}$	1.75	W
	$T_C = 25^\circ\text{C}$	20	
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~150	$^\circ\text{C}$

Electrical Characteristics ($T_A=25^\circ\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage	BV_{CBO}	$I_C = 10\text{mA}$, $I_E = 0$	100			V
Collector-emitter voltage	BV_{CEO}	$I_C = 30\text{mA}$, $I_B = 0$	100			V
Emitter-base voltage	BV_{EBO}	$I_E = 30\text{mA}$, $I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 100\text{V}$, $I_E = 0$			10	μA
Collector cut-off current	I_{CEO}	$V_{CE} = 50\text{V}$, $I_E = 0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{V}$, $I_C = 0$			2	mA
DC current gain*	h_{FE}	$V_{CE} = 4\text{V}$, $I_C = 4\text{A}$ $V_{CE} = 4\text{V}$, $I_C = 8\text{A}$	1000 500		12K	
Collector-emitter saturation voltage*	$V_{CE(sat)}$	$I_C = 4\text{A}$, $I_B = 16\text{mA}$ $I_C = 8\text{A}$, $I_B = 80\text{mA}$			2 4	V
Baser-emitter saturation voltage*	$V_{BE(sat)}$	$I_C = 8\text{A}$, $I_B = 80\text{mA}$			4.5	V
Base-emitter on voltage*	$V_{BE(on)}$	$V_{CE} = 4\text{V}$, $I_C = 4\text{A}$			2.8	V
Output capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$			200	pF

* Pulse Test : $PW \leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

Typical characteristic

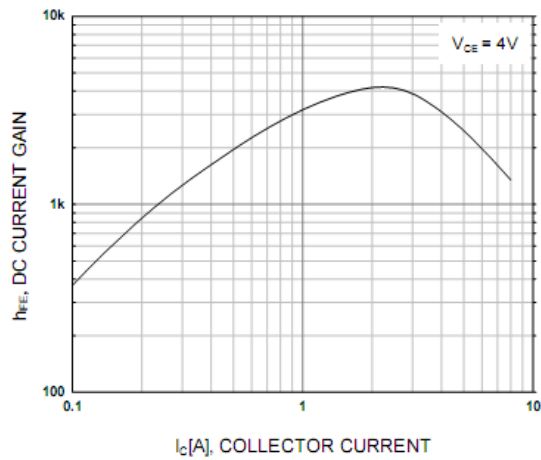


Figure 1. DC current Gain

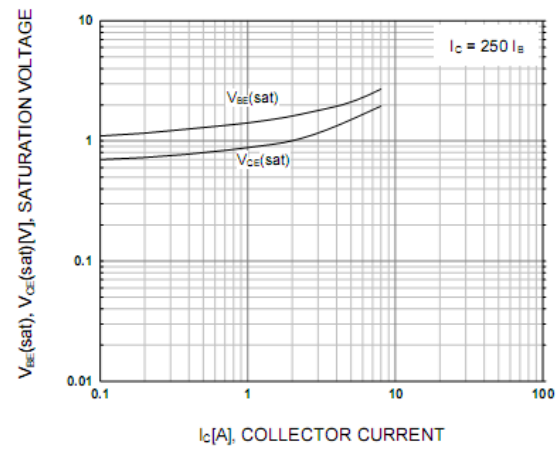


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

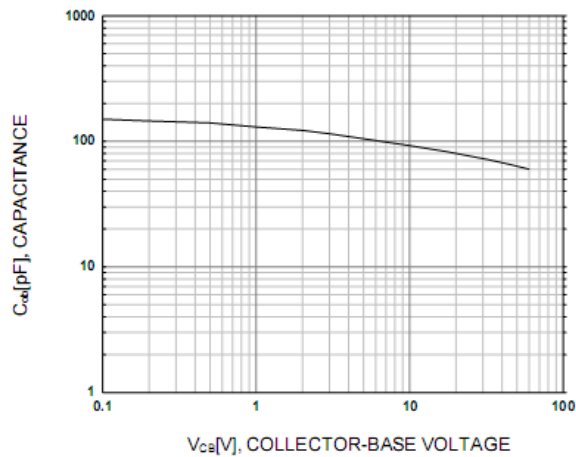


Figure 3. Collector Output Capacitance

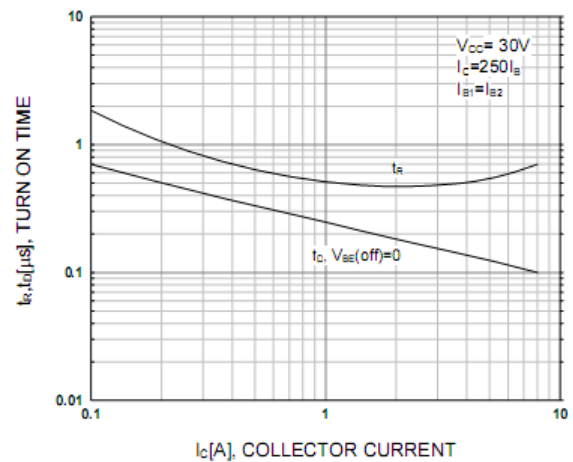


Figure 4. Turn On Time

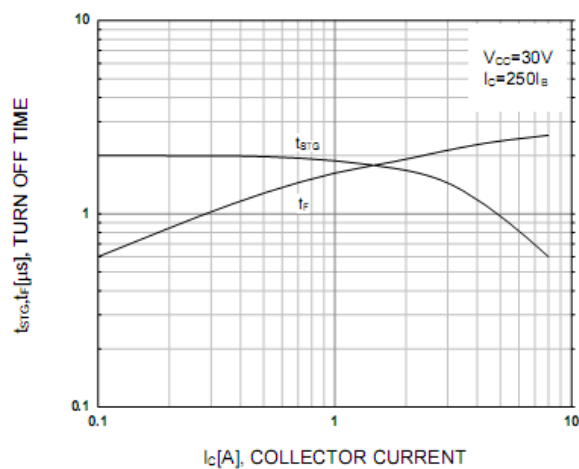


Figure 5. Turn Off Time

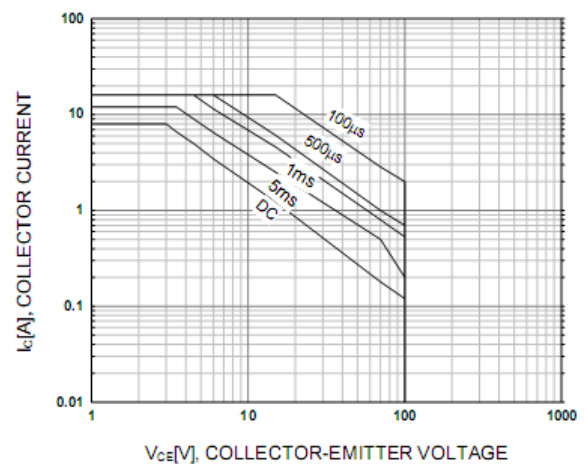
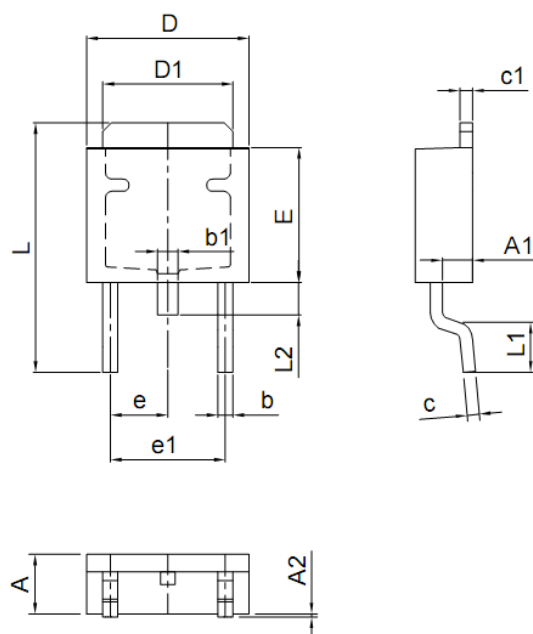


Figure 6. Safe Operating Area

Package Dimensions


Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.094
A1	1.00	1.40	0.039	0.055
A2	0.00	0.15	0.000	0.006
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.20	6.70	0.244	0.264
D1	5.10	5.50	0.201	0.217
E	5.50	6.00	0.217	0.236
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	9.70	10.40	0.382	0.409
L1	1.40	1.70	0.055	0.063
L2	0.60	1.20	0.024	0.047