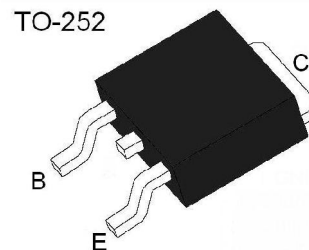


TO-252 Plastic-Encapsulate Transistors (NPN)

Feature

- Low collector-emitter saturation voltage
- Fast switching speed
- The complementary are MJD45H11
- Marking: MJD44H11



Application

- Power amplifier
- Switching circuits

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

Parameter		Symbol	Value	Unit
Collector-base voltage		BV_{CBO}	100	V
Collector-emitter voltage		BV_{CEO}	80	V
Emitter-base voltage		BV_{EBO}	5	V
Collector current (DC)		I_C	8	A
Collector current Pulse		I_{CP}	16	A
Collector power dissipation	$T_A=25^{\circ}\text{C}$	P_C	1.75	W
	$T_C=25^{\circ}\text{C}$		20	
Junction temperature		T_j	150	$^{\circ}\text{C}$
Storage temperature		T_{stg}	-65~150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu\text{A}, I_E = 0$	100			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 10\text{mA}, I_B = 0$	80			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu\text{A}, I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 80\text{V}, V_{BE} = 0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			50	μA
DC current gain *	h_{FE}	$V_{CE} = 1\text{V}, I_C = 2\text{A}$ $V_{CE} = 1\text{V}, I_C = 4\text{A}$	60 40			
Collector-emitter saturation voltage*	$V_{CE(sat)}$	$I_C = 8\text{A}, I_B = 0.4\text{A}$			1	V
Base-emitter saturation voltage*	$V_{BE(sat)}$	$I_C = 8\text{A}, I_B = 0.8\text{A}$			1.5	V
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_B = 0.5\text{A}$		50		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$		130		pF

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



Typical Characteristics

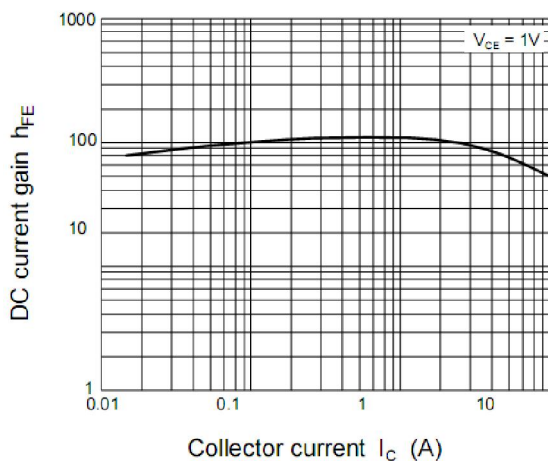


Figure 1. DC current Gain

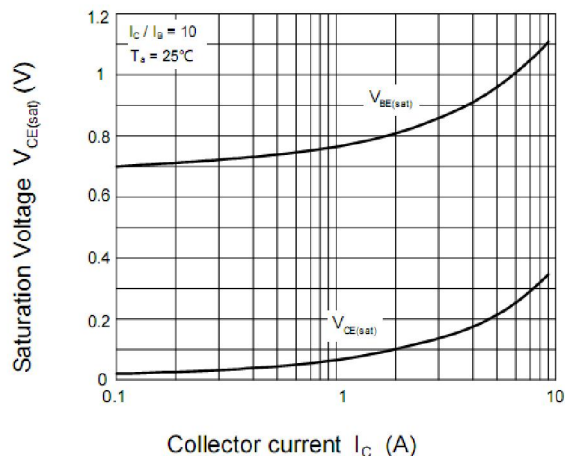


Figure 2 . Saturation Voltage

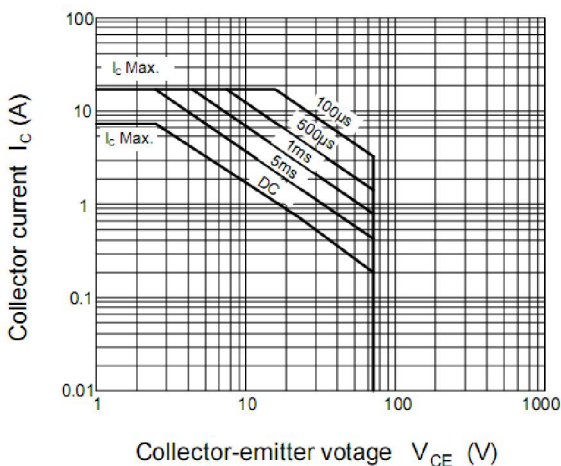


Figure 3. Safe Operating Area

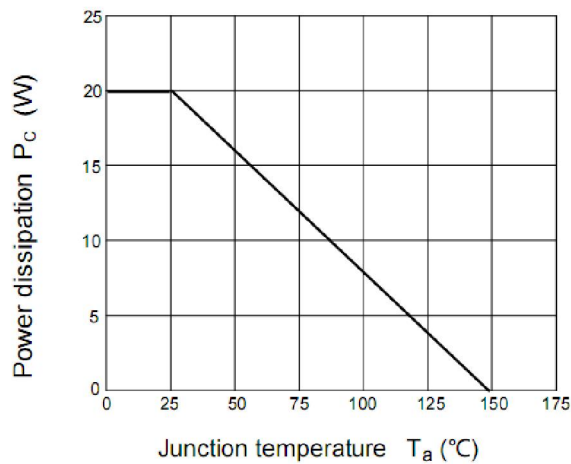
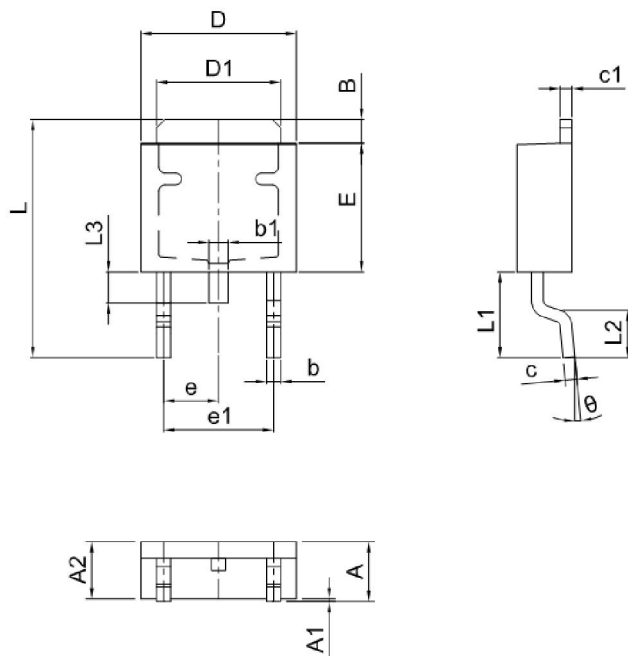


Figure 4. Power Derating



Package Dimensions



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.098
A1	0.00	0.12	0.000	0.005
A2	2.20	2.40	0.087	0.094
B	1.20	1.60	0.047	0.063
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	6.35	6.65	0.250	0.262
D1	5.20	5.40	0.205	0.213
E	5.40	5.70	0.213	0.224
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	9.60	10.20	0.378	0.402
L1	2.70	3.10	0.106	0.122
L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059