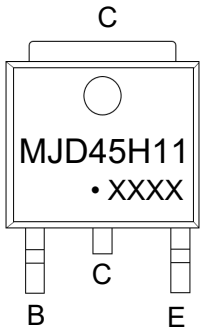
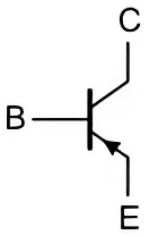
Features

- Designed for General Purpose Amplifier and Low Speed Switching Applications
- DPAK for Surface-Mount Applications
- Low Collector Emitter Saturation Voltage
- High Current



Marking and pin assignment

TO-252-2L top view



Schematic diagram

Pb-Free RoHS Halogen-Free

Maximum Ratings(Ta=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-80	V
V_{CEO}	Collector-Emitter Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-6.0	V
I_C	Collector Current	-8.0	A
P_C	Collector Power Dissipation ③	1.8	W
$R_{\Theta JC}$	Thermal resistance from junction to case①	3.0	°C/W
$R_{\Theta JA}$	Thermal resistance from junction to ambient②	68	°C/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MJD45H11	TO-252-2L	MJD45H11	2,500	5,000	35,000	13"reel

Electrical Characteristics (TJ=25℃ unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=-1mA, I_E=0	-80	--	--	V
$V_{(BR)CEO}$ ④	Collector-emitter breakdown voltage	I_C=-30mA, I_B=0	-60	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=-1mA, I_C=0	-6.0	--	--	V
I_{CBO}	Collector cut-off current	V_{CB}=-80V , I_E=0	--	--	-1.0	μA
I_{CEO}	Collector cut-off current	V_{CE}=-60V , I_B=0	--	--	-1.0	μA
I_{EBO}	Emitter cut-off current	V_{EB}=-6V , I_C=0	--	--	-1.0	μA
h_{FE}（1）	DC current gain	V_{CE}=-1V,I_C=-2A	60	--	--	
h_{FE}（2）		V_{CE}=-1V,I_C=-4A	40	--	--	
h_{FE}（3）		V_{CE}=-5V,I_C=-1A	80	--	600	
$V_{CE(sat)}$ ④	Collector-emitter saturation voltage	I_C=-8A,I_B=-0.4A	--	--	-0.8	V
$V_{BE(sat)}$ ④	Base-emitter saturation voltage	I_C=-8A,I_B=-0.8A	--	--	-1.5	V
f_T	Transition frequency	V_{CE}=-10V,Ic=-100mA, f =1MHz	10	--	--	MHz

Notes:

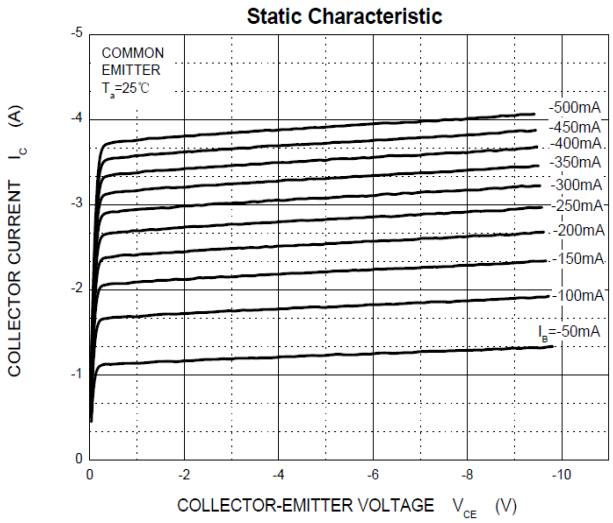
1.Thermal resistance from junction to lead mounted on FR4 PCB double sided copper with mini pad, T_C=25° C.

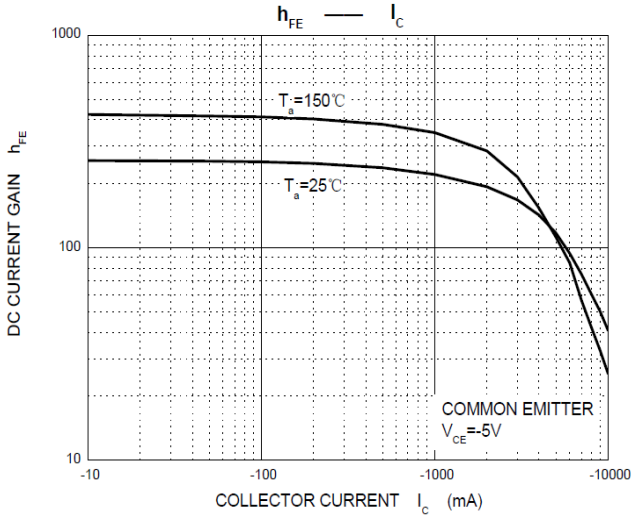
2.Thermal resistance from junction to ambient mounted on FR4 PCB double sided copper with mini pad, T_A=25° C.

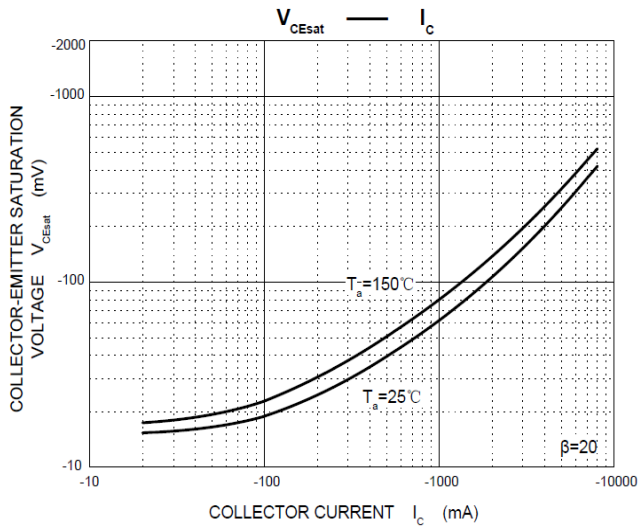
3.T_C=25℃ Limited only by maximum temperature allowed.

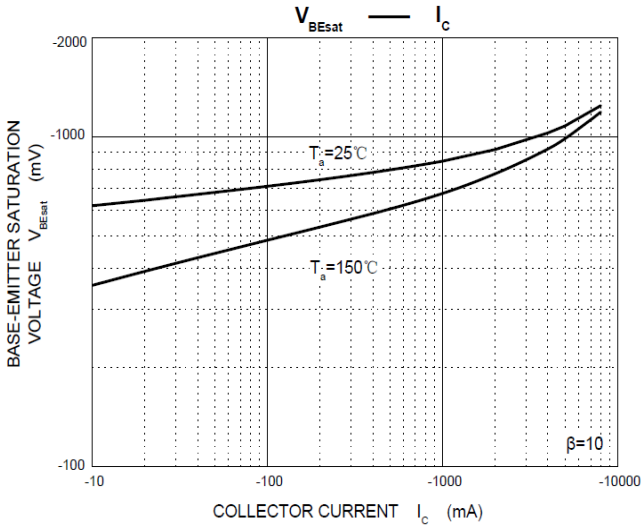
4.Pulse Test: Pulse Width≤380μs, Duty Cycle≤2%.

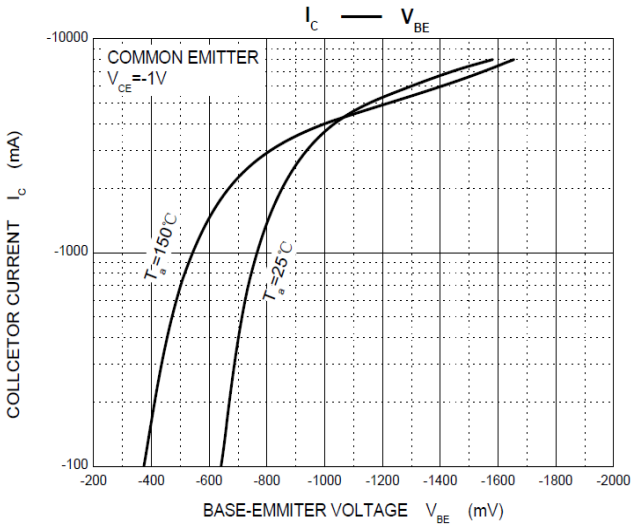
Typical Operating Characteristics

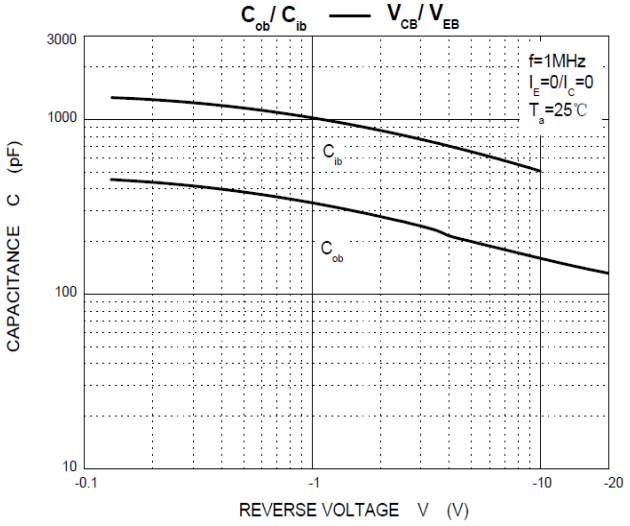


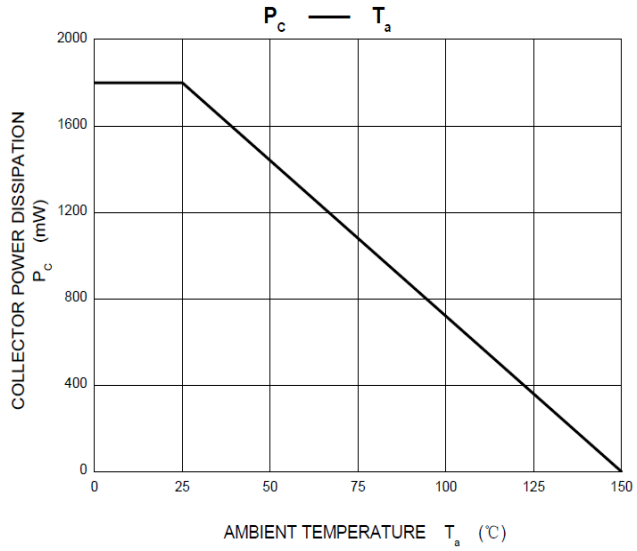


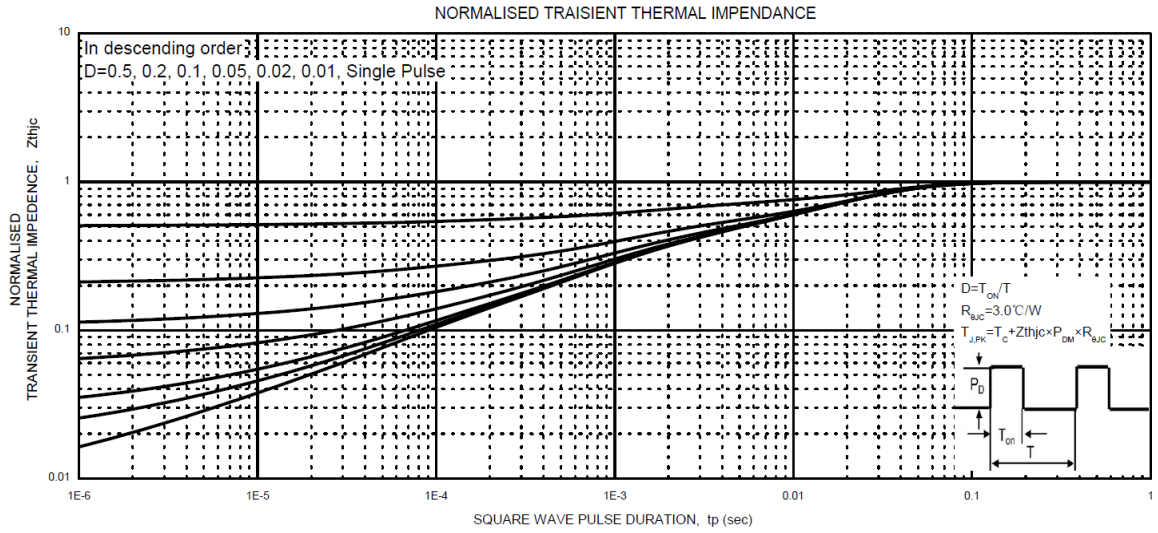


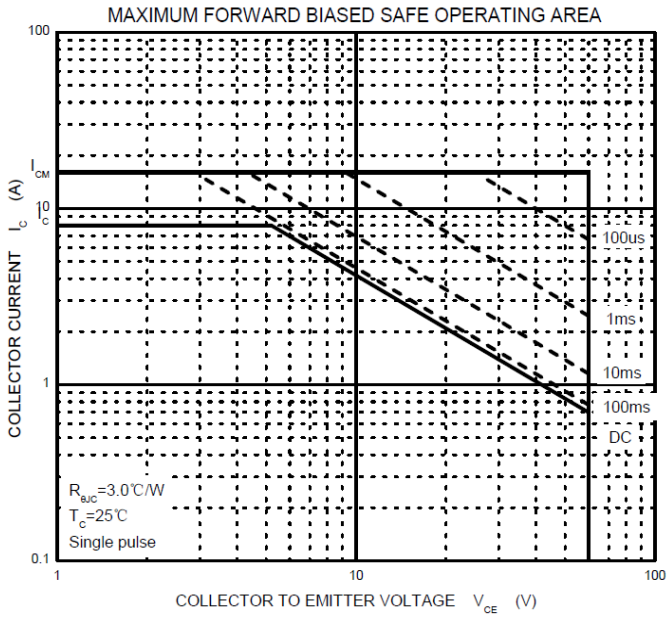




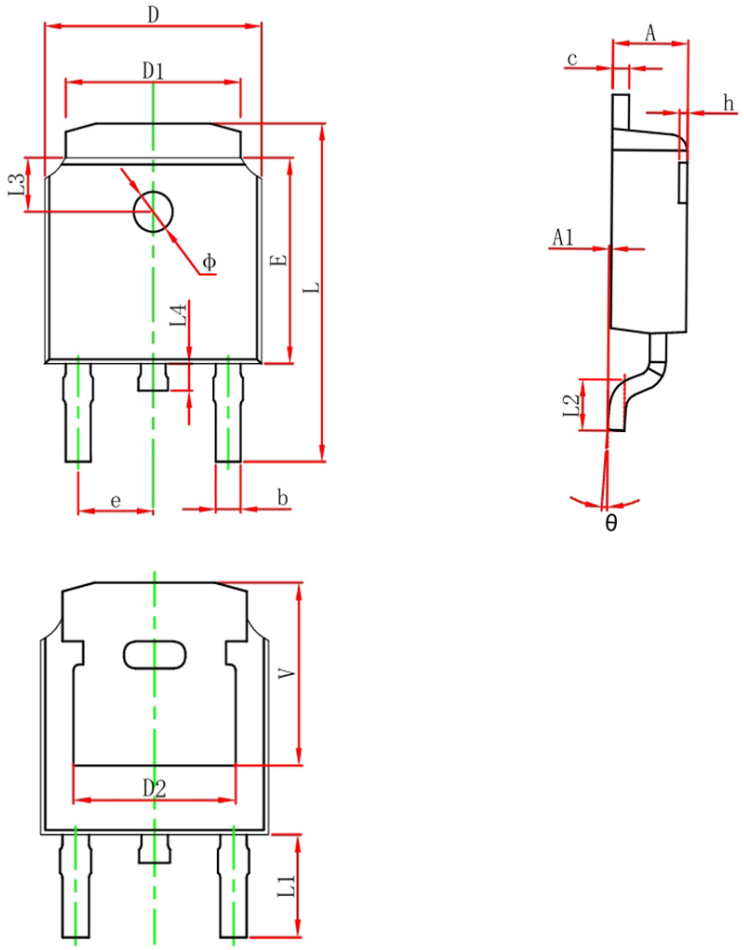





NORMALISED TRAISIENT THERMAL IMPENDANCE
In descending order
D=0.5, 0.2, 0.1, 0.05, 0.02, 0.01, Single Pulse
NORMALISED TRANSIENT THERMAL IMPEDENCE, Zthjc
10
1
0.1
0.01
1E-6
1E-5
1E-4
1E-3
0.01
0.1
1
SQUARE WAVE PULSE DURATION, tp (sec)
D=T_ON/T
R_θJC=3.0℃/W
T_J.PK=T_C+Zthjc×P_DM×R_θJC
P_D
T_on
T


MAXIMUM FORWARD BIASED SAFE OPERATING AREA
COLLECTOR CURRENT I_C (A)
100
I_CM
10
I_C
1
0.1
100us
1ms
10ms
100ms
DC
R_θJC=3.0℃/W
T_C=25℃
Single pulse
1
10
100
COLLECTOR TO EMITTER VOLTAGE V_CE (V)

TO-252-2L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.450	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.386	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	