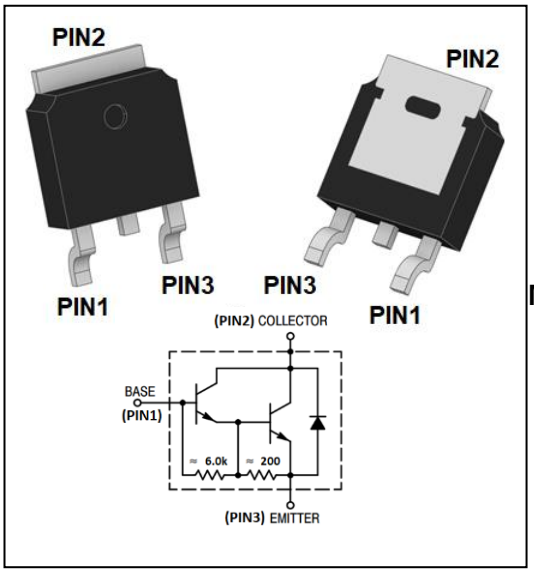
NPN Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1

Applications

- Complement to MJD127
- High DC Current Gain

Mehanical Data

- Package: TO-252
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Unit Weight: 0.32g

■ **Maximum Ratings** (Ta=25℃ unless otherwise noted)

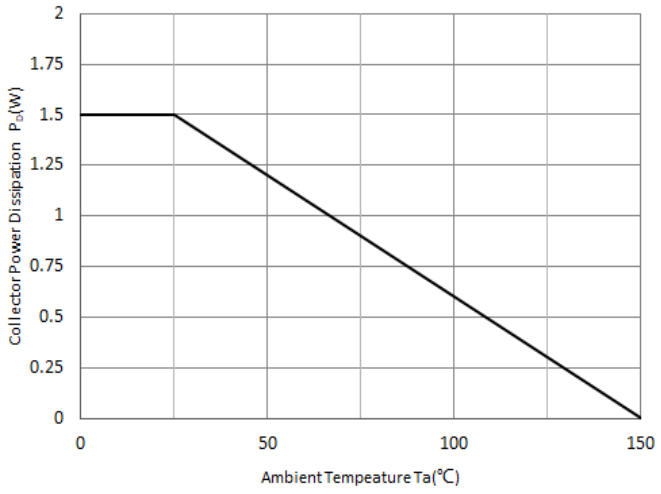
Item	Symbol	Unit	Value
Device marking code			MJD122
Collector-base voltage	V_{CBO}	V	100
Collector-emitter voltage	V_{CEO}	V	100
Emitter-base voltage	V_{EBO}	V	5
Collector current	I_C	A	8
Power dissipation (*)	P_D	W	1.5
Thermal resistance, junction-to-ambient (*)	R_{thJA}	℃/W	83.3
Junction temperature	T_j	℃	-55 to +150
Storage temperature	T_{STG}	℃	-55 to +150

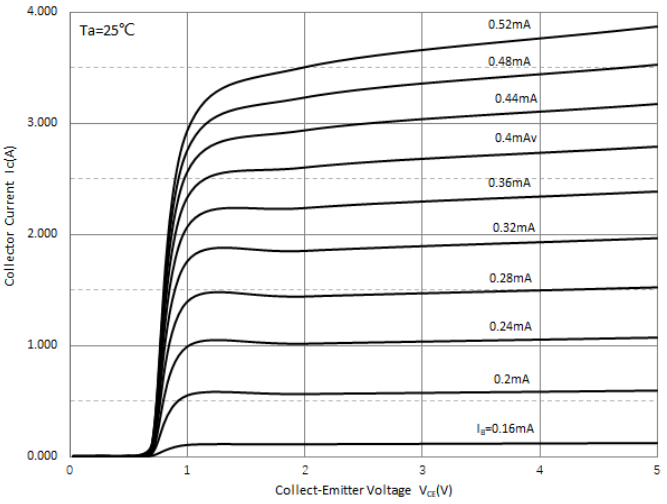
(*) Device mounted on FR-4 PCB (25.4*25.4*1.1mm) mounting pad.

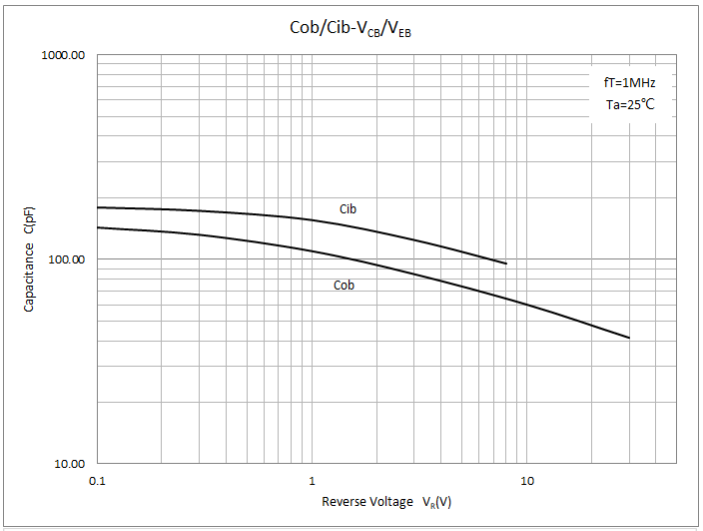
■ Electrical Characteristics (Ta=25℃ unless otherwise noted)

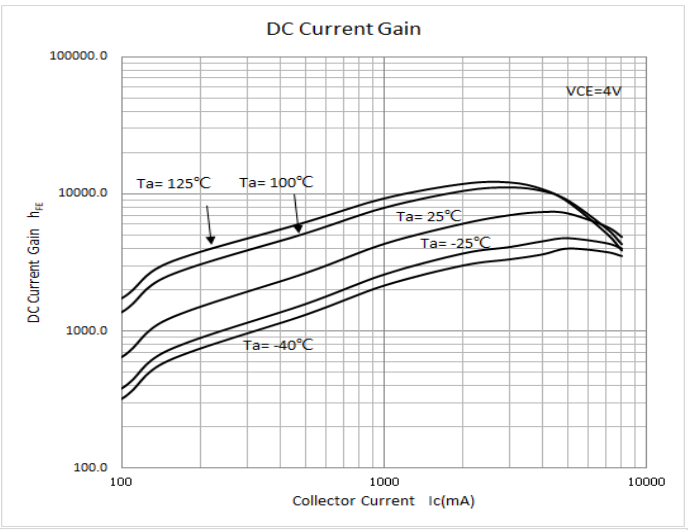
Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	I_C= 1mA, I_E=0	100		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	I_C= 30mA, I_B=0	100		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	I_E= 3mA, I_C=0	5		
Collector-base cut-off current	I_{CBO}	uA	V_{CB}=100V			10
Collector cutoff current	I_{CEO}	uA	V_{CE}=50V			10
Emitter-base cut-off current	I_{EBO}	mA	V_{EB}=5V			2
DC current gain	h_{FE}		V_{CE}= 4V, I_C= 4A	1000		12000
			V_{CE}= 4V, I_C= 8A	100		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	I_C= 4A, I_B= 16mA			2.0
			I_C= 8A, I_B= 80mA			4.0
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	I_C= 8A, I_B= 80mA			4.5
Base-Emitter Voltage	V_{BE}	V	V_{CE}= 4V, I_C= 4A			2.8
Collector-base output capacitance	Cob	pF	V_{CB}=10V,I_E=0A,f=1MHz		60	

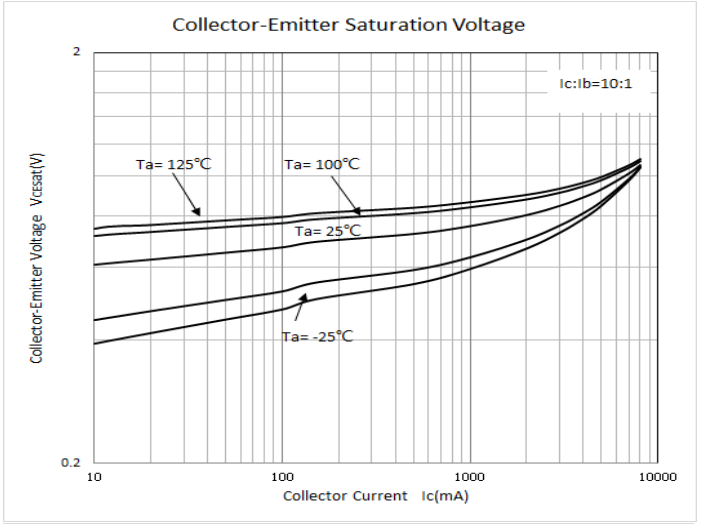
■ Characteristics(Typical)

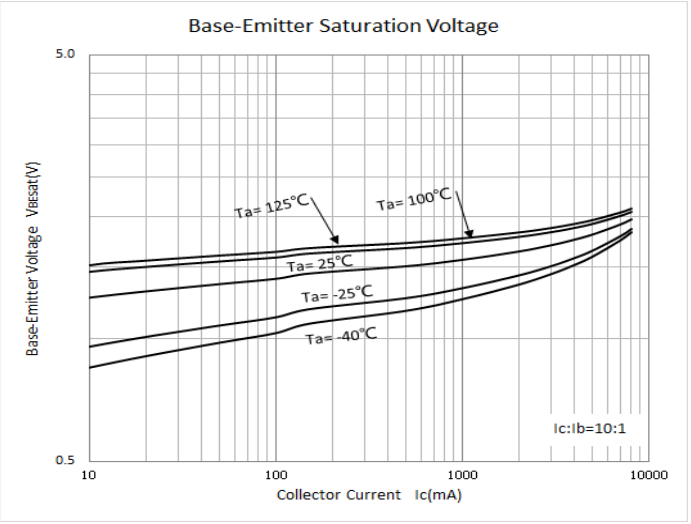


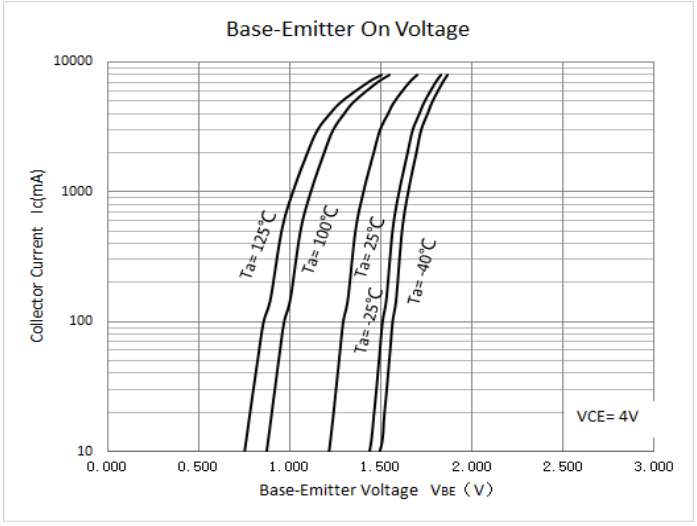



Cob/Cib-V_{CB}/V_{EB}
1000.00
100.00
10.00
Capacitance C(pF)
fT=1MHz
Ta=25℃
Cib
Cob
0.1
1
10
Reverse Voltage V_R(V)


DC Current Gain
100000.0
10000.0
1000.0
100.0
DC Current Gain h_{FE}
VCE=4V
Ta= 125℃
Ta= 100℃
Ta= 25℃
Ta= -25℃
Ta= -40℃
100
1000
10000
Collector Current Ic(mA)


Collector-Emitter Saturation Voltage
2
0.2
Collector-Emitter Voltage Vcesat(V)
Ic:Ib=10:1
Ta= 125℃
Ta= 100℃
Ta= 25℃
Ta= -25℃
10
100
1000
10000
Collector Current Ic(mA)

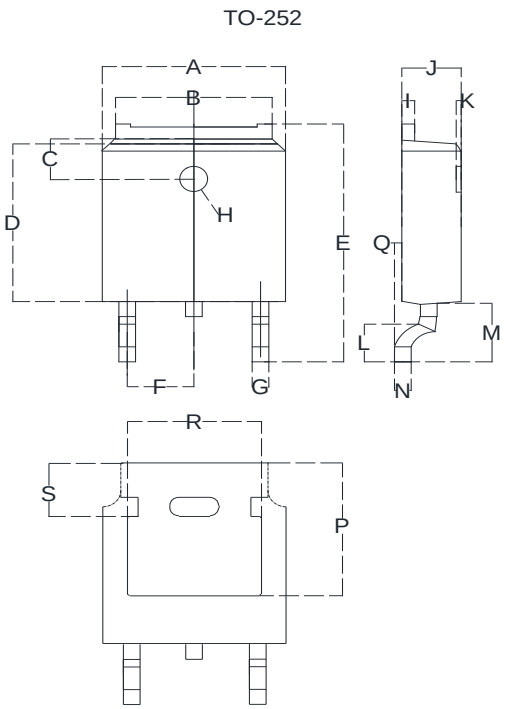

Base-Emitter Saturation Voltage
5.0
0.5
Base-Emitter Voltage Vbesat(V)
Ta= 125℃
Ta= 100℃
Ta= 25℃
Ta= -25℃
Ta= -40℃
Ic:Ib=10:1
10
100
1000
10000
Collector Current Ic(mA)


Base-Emitter On Voltage
10000
1000
100
10
Collector Current Ic(mA)
Ta= 125℃
Ta= 100℃
Ta= 25℃
Ta= -25℃
Ta= -40℃
VCE= 4V
0.000
0.500
1.000
1.500
2.000
2.500
3.000
Base-Emitter Voltage V_{BE}（V）

■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MJD122	F1	2500	2500	25000	13”Reel

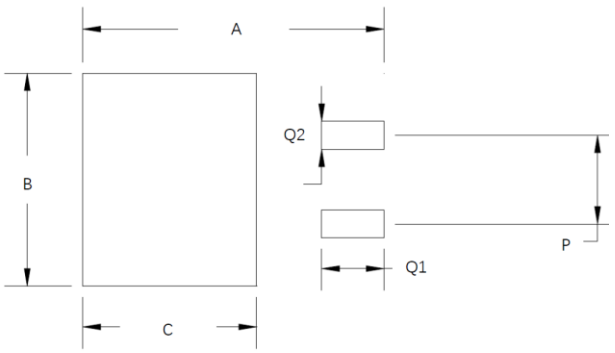
■ TO-252 Package information



Dimensions in millimeters

TO-252		
Dim	Min	Max
A	6.500	6.700
B	5.100	5.460
C	1.400	1.800
D	6.000	6.200
E	10.000	10.400
F	2.166	2.366
G	0.660	0.860
H	Φ1.050	Φ1.350
I	0.460	0.580
J	2.200	2.400
K	0	0.300
L	0.890	2.290
M	2.730	3.080
N	0.430	0.580
P	5.15	5.45
Q	0	0.2
R	4.50	5.10
S	1.60	2.40

■ Suggested Pad Layout



Dim	Millimeters
A	11.4
B	6.74
C	6.23
P	4.56
Q1	2.28
Q2	1.52

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