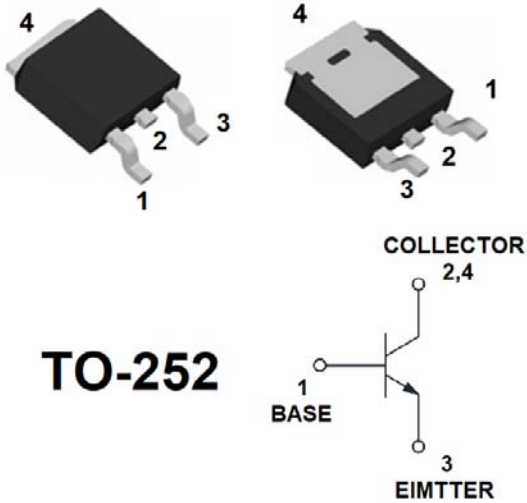


NPN Power Transistors



Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Part no. with suffix "Q" means AEC-Q101 qualified

Applications

- Designed for general purpose amplifier and low speed switching applications.

Mechanical Data

- Case: TO-252
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Value
Collector-Base Voltage	V_{CBO}	V	100
Collector-Emitter Voltage	V_{CEO}	V	100
Emitter-Base Voltage	V_{EBO}	V	5
Collector Current -Continuous	I_C	A	6
Total Device Dissipation (*)	P_D	W	1.25
Thermal Resistance, Junction to Ambient Air (*)	R_{thJA}	°C/W	100
Thermal Resistance, Junction to Mounting Base	R_{thJ-mb}	°C/W	8.3
Junction Temperature	T_j	°C	-55 to +150
Storage Temperature	T_{STG}	°C	-55 to +150

(*) Device mounted on FR-4 PCB 15 x 17 x 0.8 mm



MJD41CQ

■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C=0.1mA, I_E=0$	100		
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C=30mA, I_B=0$	100		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E=0.1mA, I_C=0$	5		
Collector-base cut-off current	I_{CEO}	μA	$V_{CE}=60V, I_B=0$			50
Emitter-base cut-off current	I_{EBO}	mA	$V_{EB}=5V, I_C=0$			0.5
DC current gain	h_{FE}		$V_{CE}=4V, I_C=1A$	30		
			$V_{CE}=4V, I_C=3A$	15		155
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=6A, I_B=0.6A$			1.5
Base-emitter voltage	V_{BE}	V	$I_C=6A, V_{CE}=4V$			2.0

■ Other Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Transition frequency	f_T	MHz	$V_{CE}=10V, I_C=0.5A, f=1KHz$	3		

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MJD41CQ	F1	MJD41C	2500	2500	25000	13"Reel



■ Characteristics(Typical)

Fig.1 - Static characteristic

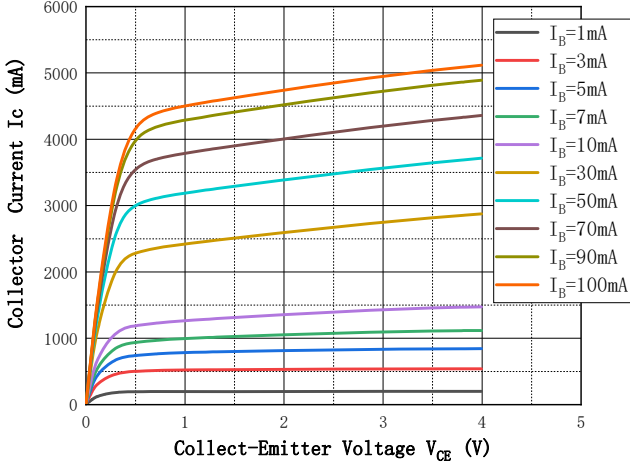


Fig.2 - DC Current Gain

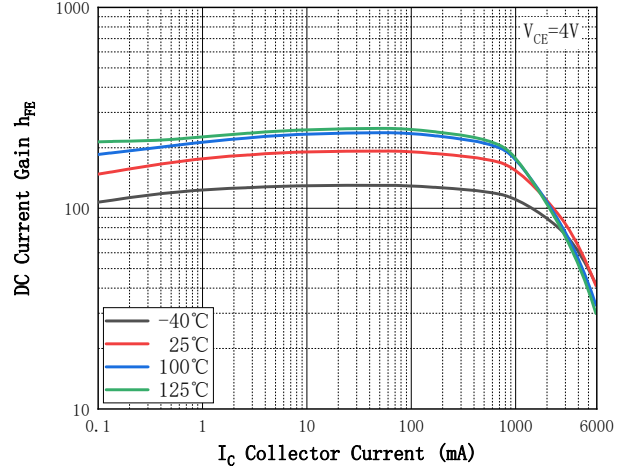


Fig.3 - Collect-Emittor Saturation Voltage

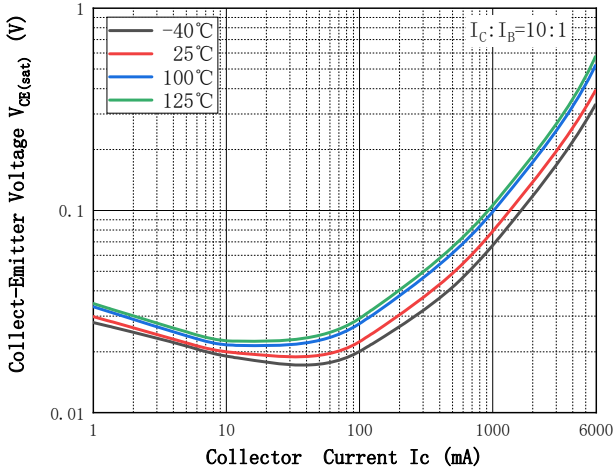


Fig.4 - Base-Emittor Voltage

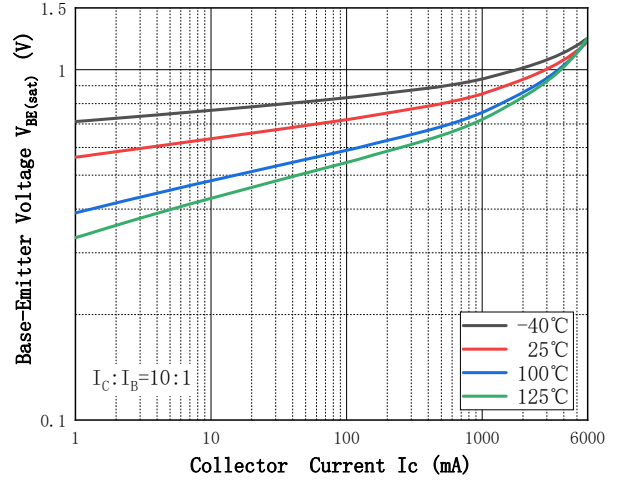


Fig.5 - Base-Emittor On Voltage

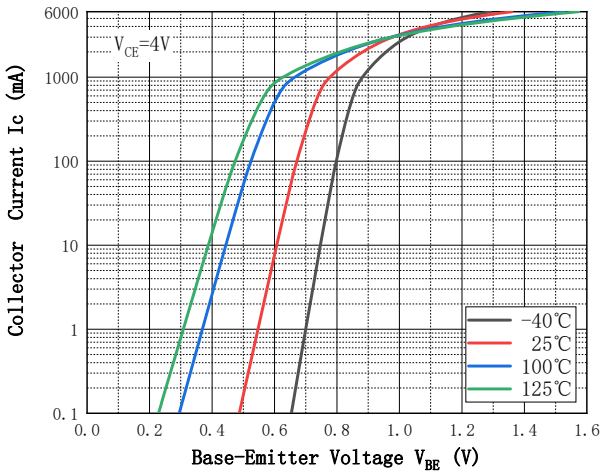
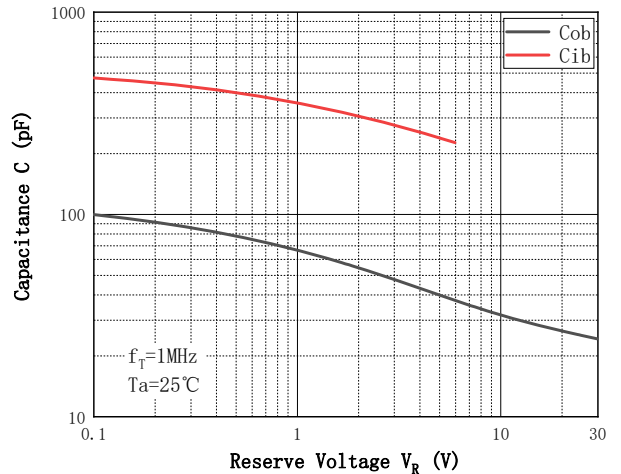


Fig.6 - Cob/Cib—VCB/VEB





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Fig.7 - Transient thermal impedance

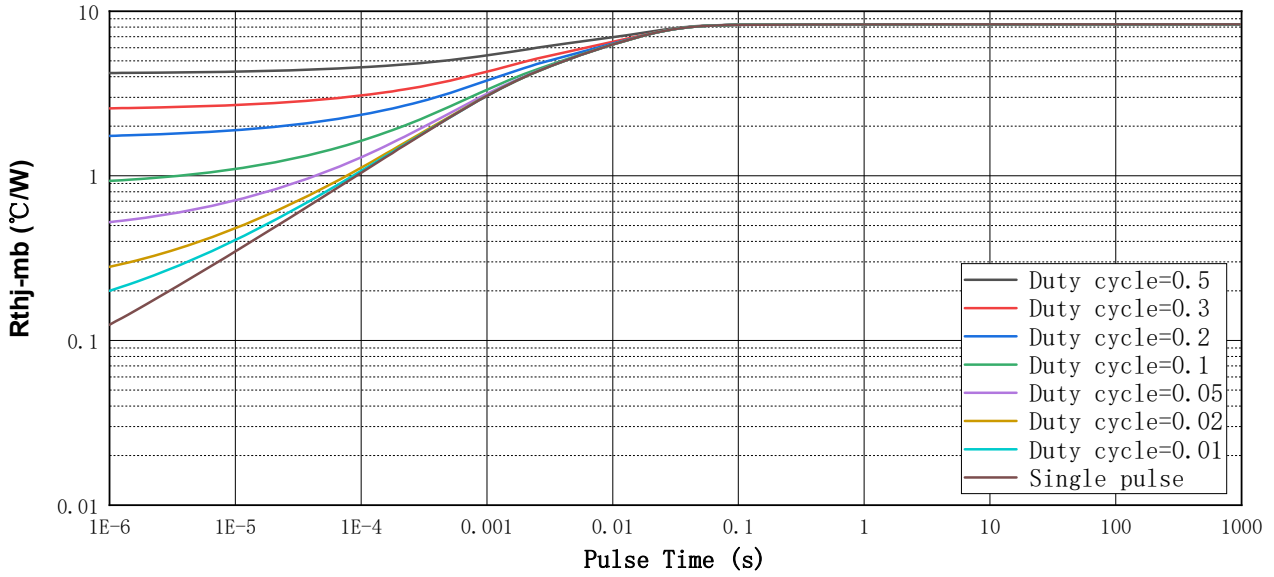


Fig.8 - Collector Power Derating Curve

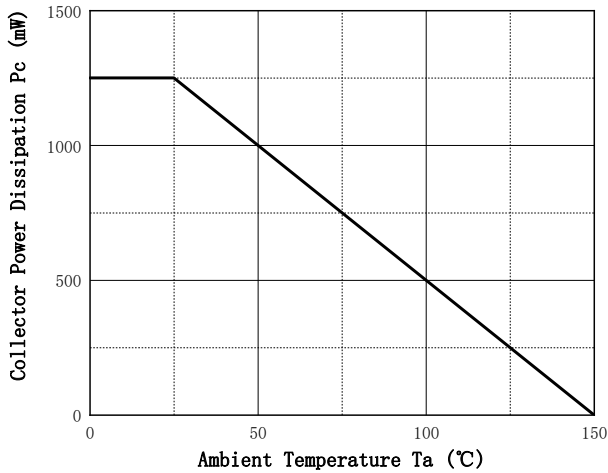
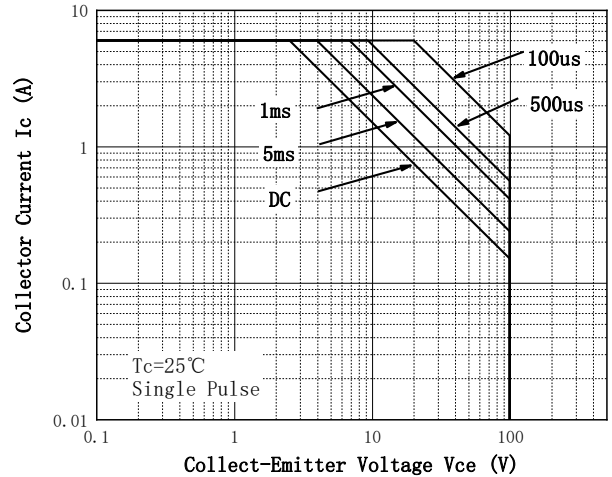


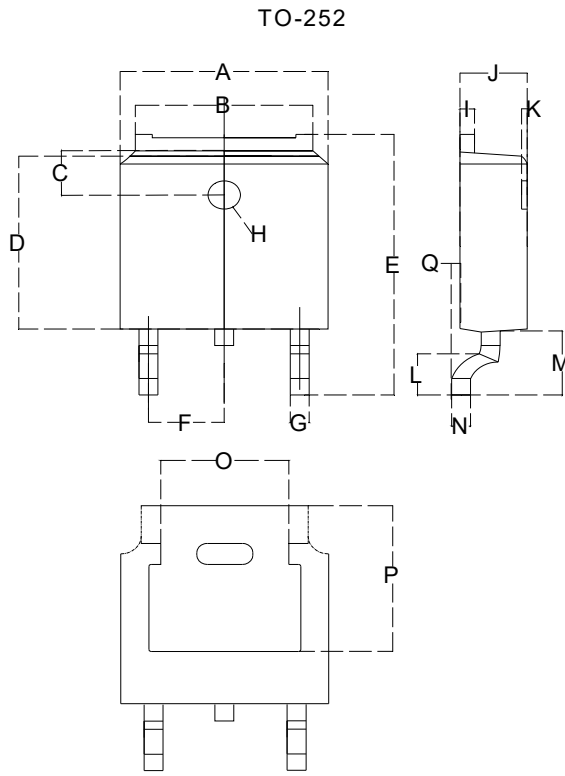
Fig.9 - Safe Operating Area





MJD41CQ

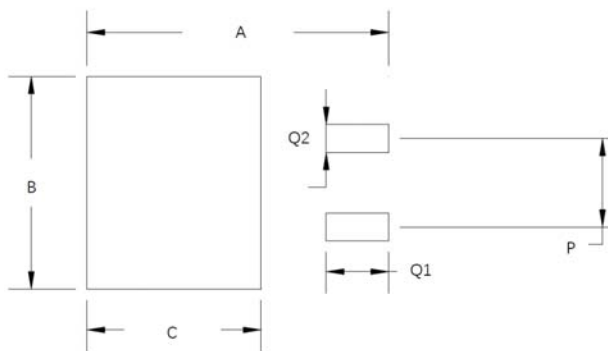
■ TO-252 Package information



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	Φ 1.050	Φ 1.350
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
O	4.20	4.95
P	5.15	5.45
Q	0	0.2

■ Suggested Pad Layout



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



MJD41CQ

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