

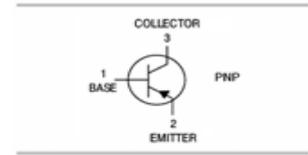
Features

- Epitaxial planar die construction
- Low formed for surface mount application
- RoHS compliant with Halogen-free

HF

Mechanical Data

- Case: TO-252
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



TO-252

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
MJD42C	TO-252	80 pcs / Tube or 2500 pcs / Tape & Reel	MJD42C

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	-100	V
Collector-Emitter Breakdown Voltage	V _{CEO}	-100	V
Emitter-Base Breakdown Voltage	V _{EBO}	-5	V
Collector Current (Continuous)	I _C	-6	A
Collector Current (Pulse)	I _{CM}	-10	A
Base Current (Continuous)	I _B	-2	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T _C = 25°C) *1	P _D	10	W
Thermal Resistance Junction-to-Air *1	R _{θJA}	33	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	12.5	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	1.65	°C/W
Junction Temperature	T _J	-65 ~ +150	°C
Storage Temperature Range	T _{STG}	-65 ~ +150	°C

Note 1: The data tested by surface mounted on a 25.4mm * 25.4mm * 1mm FR4-epoxy P.C.B

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-100	-	-	V
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	$I_C = -30\text{mA}, I_B = 0$	-100	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -100\mu\text{A}, I_C = 0$	-5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -100\text{V}, I_E = 0$	-	-	-50	μA
Collector Cut-off current	I_{CEO}	$V_{CE} = -60\text{V}, I_B = 0$	-	-	-50	μA
Collector Cut-off current	I_{CES}	$V_{CE} = -100\text{V}, V_{EB} = 0$	-	-	-10	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$	-	-	-0.5	mA
DC Current Gain	h_{FE}	$V_{CE} = -4\text{V}, I_C = -0.3\text{A}$	30	-	-	-
		$V_{CE} = -4\text{V}, I_C = -3\text{A}$	15	-	75	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -6\text{A}, I_B = -0.6\text{A}$	-	-	-1.5	V
Base-emitter Turn-on Voltage	$V_{BE(ON)}$	$I_C = -6\text{A}, V_{CE} = -4\text{V}$	-	-	-2	V
Transition Frequency	f_T	$I_C = -0.5\text{A}, V_{CE} = -10\text{V}$ $f = 1\text{MHz}$	3	-	-	MHZ

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

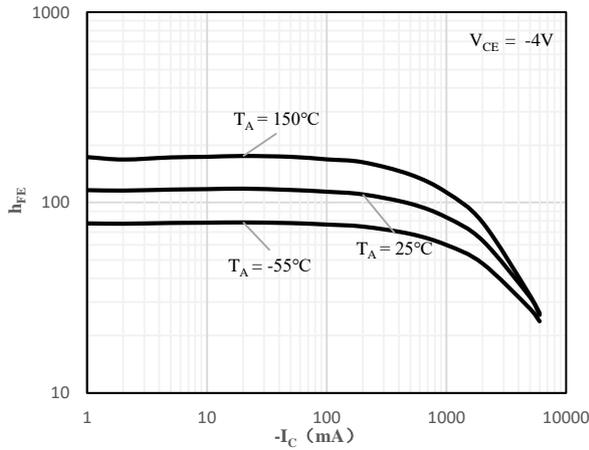


Fig 1 DC Current Gain as a Function of Collector Current

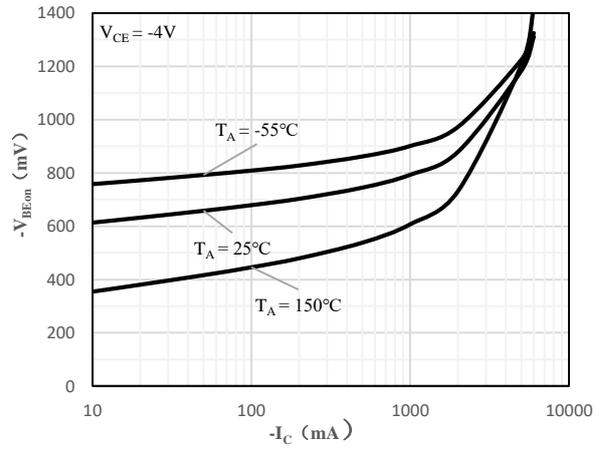


Fig 2 Base-Emitter Turn-on Voltage as a Function of Collector Current

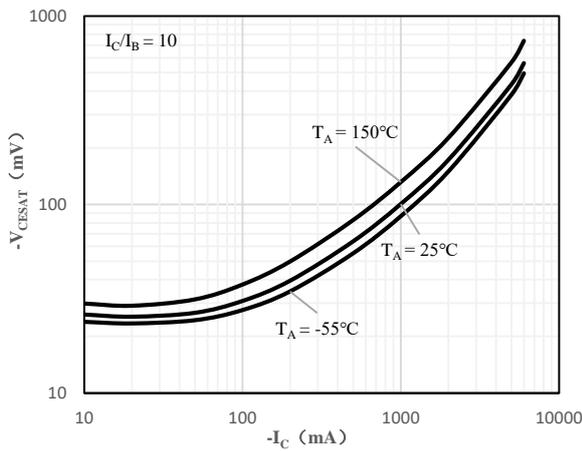


Fig 3 Collect-Emmitter Saturation Voltage as a Function of Collector Current

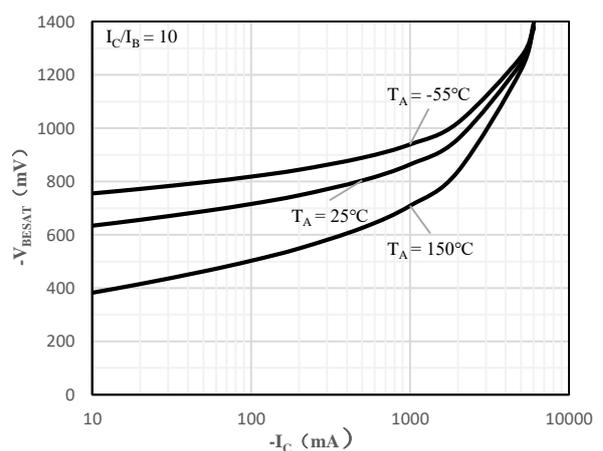
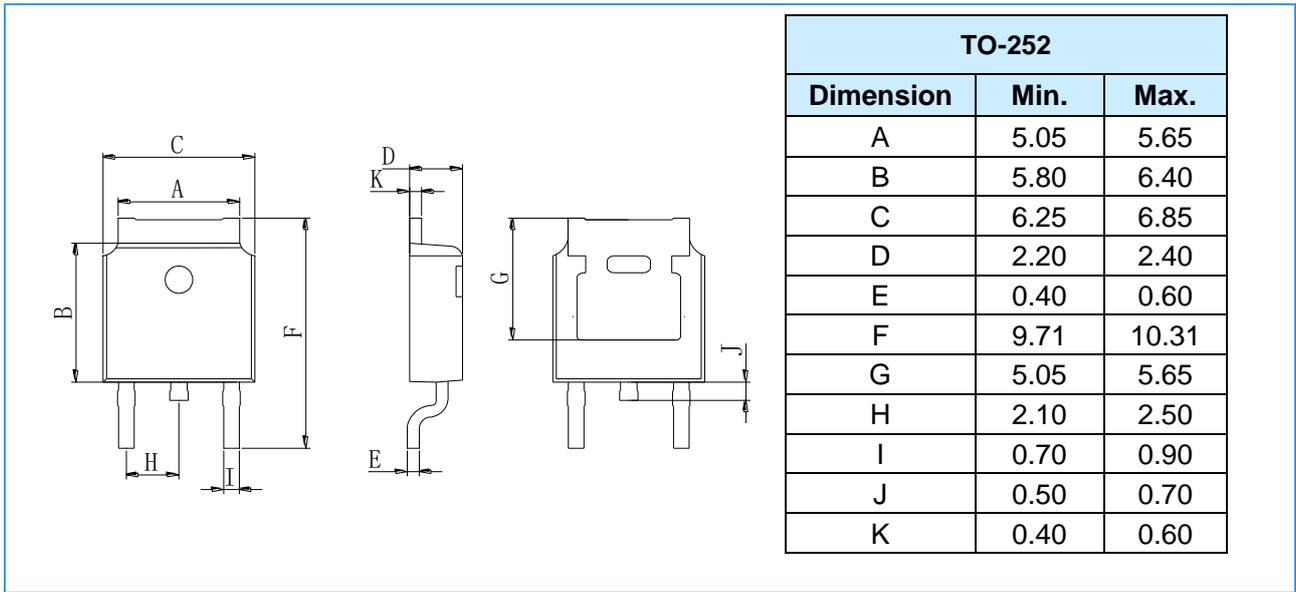


Fig 4 Base-Emitter Saturation Voltage as a Function of Collector Current

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)

