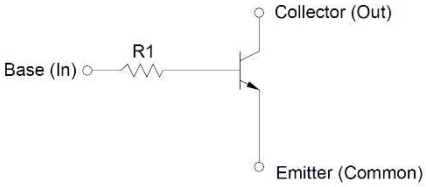
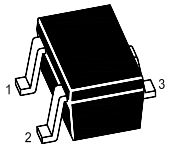
MMDTC150W

NPN Silicon Epitaxial Planar Digital Transistor

Features

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process





1.Base 2.Emitter 3.Collector
SOT-323 Plastic Package

Absolute Maximum Ratings at T_a = 25℃

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	50	V
Collector Emitter Voltage	V_{CEO}	50	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Total Power Dissipation	P_{tot}	200	mW
Thermal Resistance from Junction to Ambient [1)]	$R_{\theta JA}$	625	℃/W
Operating Junction and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	℃

[1)] Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

Dated：03/03/2023 Rev: 02

Characteristics at T_a = 25℃

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 5 V, I_C = 1 mA	h_{FE}	120	-	-	-
Collector Base Cutoff Current at V_{CB} = 50 V	I_{CBO}	-	-	100	nA
Collector Emitter Cutoff Current at V_{CE} = 50 V	I_{CEO}	-	-	100	nA
Emitter Base Cutoff Current at V_{EB} = 5 V	I_{EBO}	-	-	100	nA
Collector Base Breakdown Voltage at I_C = 100 μA	$V_{(BR)CBO}$	50	-	-	V
Collector Emitter Breakdown Voltage at I_C = 100 μA	$V_{(BR)CEO}$	50	-	-	V
Emitter Base Breakdown Voltage at I_E = 10 μA	$V_{(BR)EBO}$	5	-	-	V
Collector Emitter Saturation Voltage at I_C = 10 mA, I_B = 0.5 mA	$V_{CE(sat)}$	-	-	0.3	V
Transition frequency at V_{CE} = 10 V, I_C = 5 mA, f = 100 MHz	f_T	-	250	-	MHz
Input Resistor	R_1	70	100	130	KΩ

Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

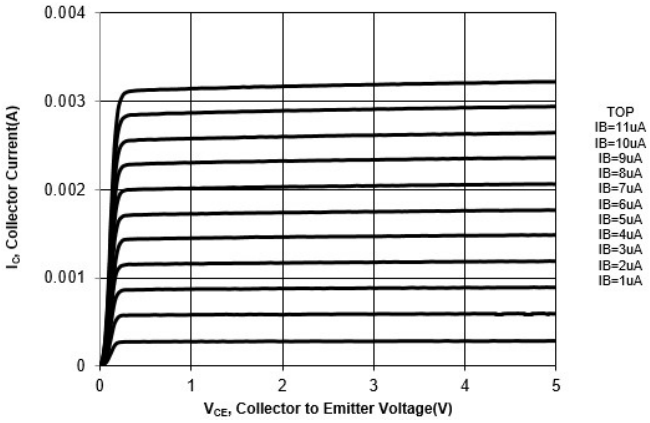


Fig. 2 Collector Curren vs. V_{BE}

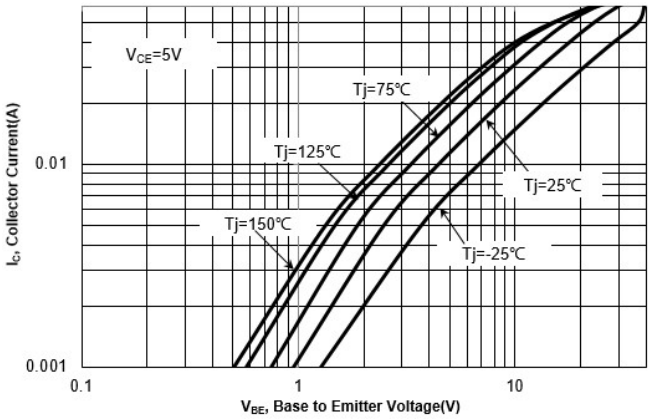


Fig. 3 h_{FE} vs. Collector Current

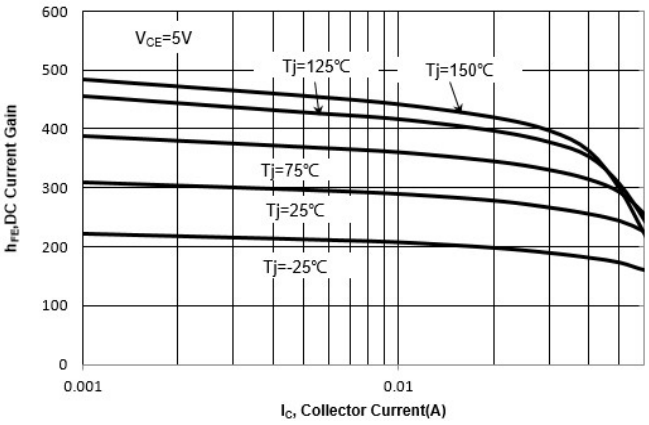


Fig. 4 $V_{CE(sat)}$ vs. Collector Current

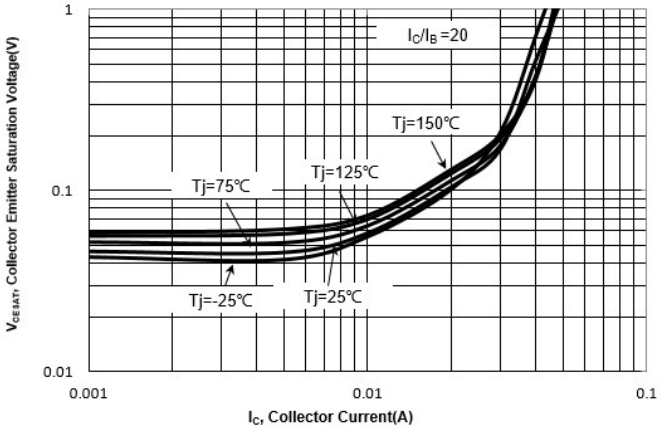
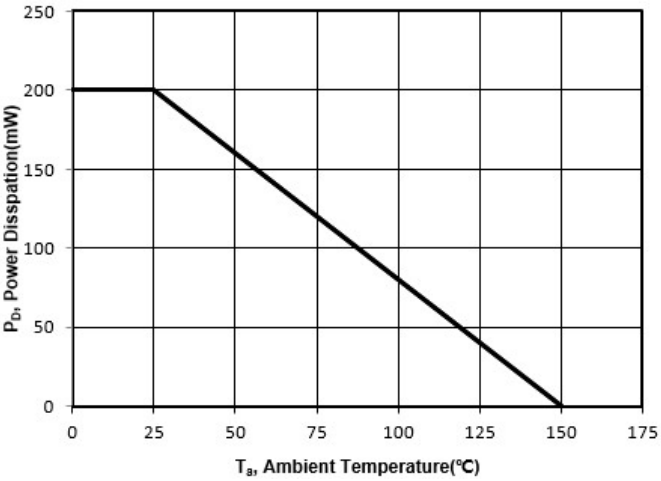


Fig. 5 Power Derating Curve



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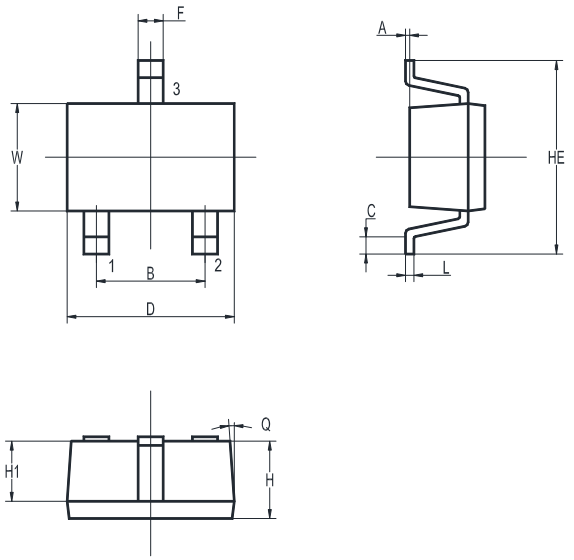
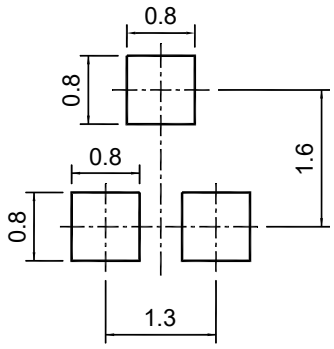
Package Outline Dimensions (Units: mm) SOT-323



UNIT	A	B	C	D	H	H1	HE	F	L	W	Q
mm	0.1 MAX.	1.4 1.2	0.2 MIN.	2.1 1.9	1.0 0.8	0.7 TYP.	2.4 2.0	0.35 0.25	0.15 0.05	1.35 1.15	5° MAX.

Recommended Soldering Footprint

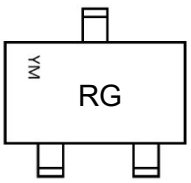


Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-323	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

" RG " = Part No.
" YM " = Date Code Marking
" Y " = Year
" M " = Month
Font type: Arial



Dated：03/03/2023 Rev: 02