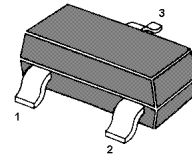
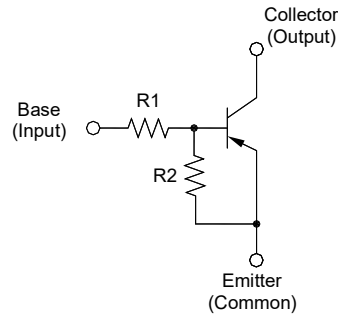


MMDT1P141P

PNP Silicon Epitaxial Planar Digital Transistor

Features

- With built-in bias resistors,
R1 = R2 = 10 KΩ



1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package

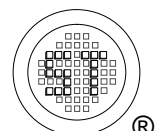
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Emitter Voltage	$-V_{CEO}$	50	V
Collector Base Voltage	$-V_{CBO}$	50	V
Input Voltage	V_{IN}	- 40 to + 10	V
Collector Current	$-I_C$	50	mA
Peak Collector Current	$-I_{CM}$	100	mA
Total Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient ¹⁾	$R_{\theta JA}$	625	$^\circ\text{C/W}$

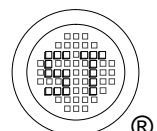
¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.



MMDT1P141P

Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE} = 5\text{ V}$, $-I_C = 5\text{ mA}$	h_{FE}	30	-	-	-
Collector Emitter Cutoff Current at $-V_{CE} = 50\text{ V}$	$-I_{CEO}$	-	-	0.5	μA
Emitter Base Cutoff Current at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	-	0.88	mA
Collector Emitter Saturation Voltage at $-I_C = 10\text{ mA}$, $-I_B = 0.5\text{ mA}$	$-V_{CE(sat)}$	-	-	0.3	V
Input Voltage (ON) at $-V_{CE} = 0.3\text{ V}$, $-I_C = 10\text{ mA}$	$-V_{I(ON)}$	-	-	3	V
Input Voltage (OFF) at $-V_{CE} = 5\text{ V}$, $-I_C = 0.1\text{ mA}$	$-V_{I(OFF)}$	0.5	-	-	V
Transition Frequency at $-V_{CE} = 10\text{ V}$, $-I_C = 5\text{ mA}$, $f = 100\text{ MHz}$	f_T	-	250	-	MHz
Input Resistance	R_1	7	10	13	$\text{K}\Omega$
Resistance Ratio	R_2 / R_1	0.8	1	1.2	-



MMDT1P141P

Electrical Characteristics Curves

Fig. 1 Collector Current vs. $V_{I(ON)}$, Input Voltage

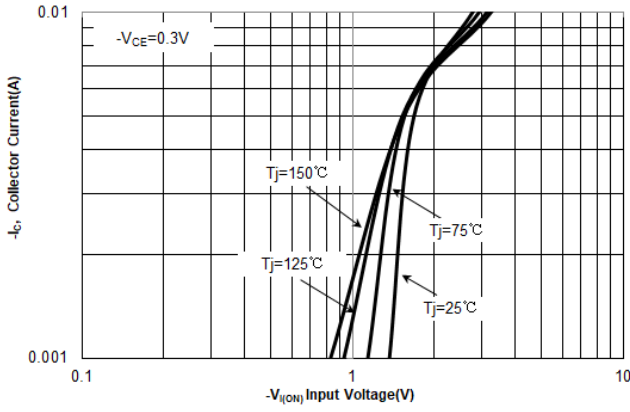


Fig. 2 Collector Current vs. $V_{I(OFF)}$, Input Voltage

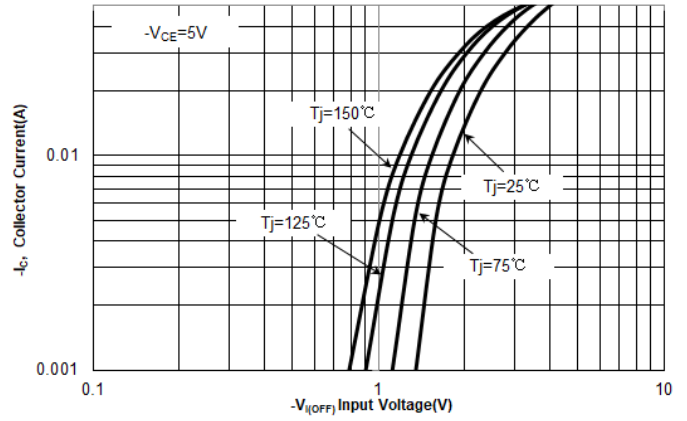


Fig. 3 DC Current Gain vs. Collector Current

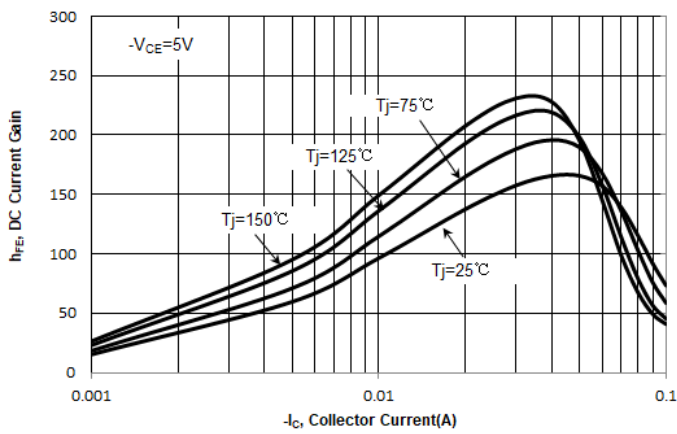
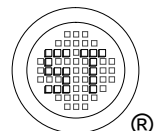
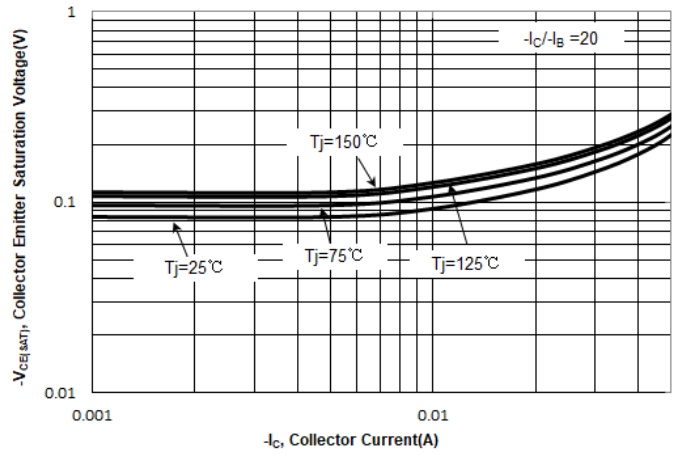


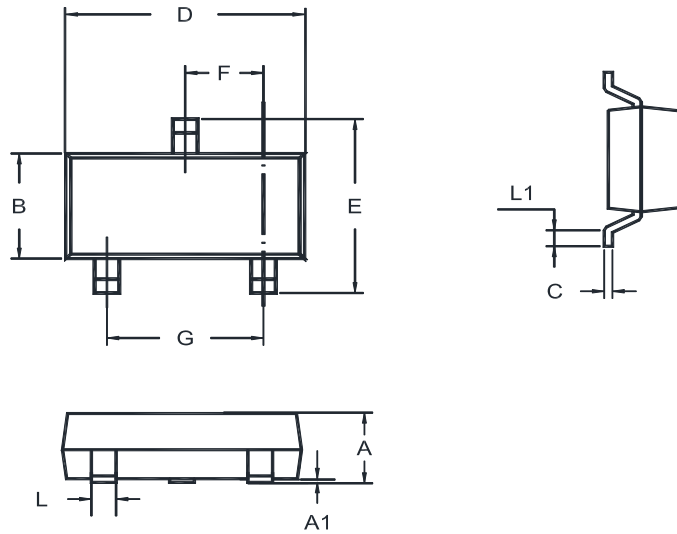
Fig. 4 V_{CESAT} vs. Collector Current



MMDT1P141P

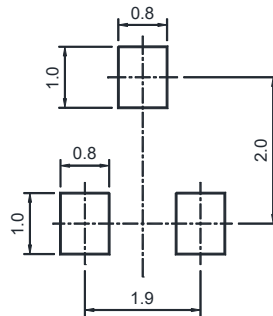
Package Outline (Dimensions in mm)

SOT-23



Unit	A	A1	B	C	D	E	F	G	L	L1
mm	1.20	0.100	1.40	0.19	3.04	2.6	1.02	2.04	0.51	0.2
	0.89	0.013	1.20	0.08	2.80	2.2	0.89	1.78	0.37	MIN

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-23	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

"RR1" = Part No.

"YM" = Date Code Marking

"Y" = Year

"M" = Month

Font type: Arial

