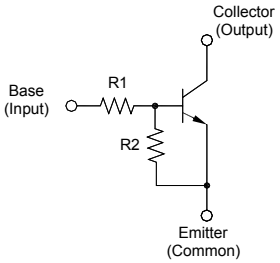
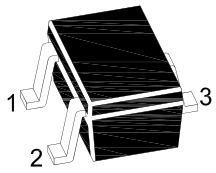
NPN Silicon Epitaxial Planar Digital Transistor

Features

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

MARKING: 24





1.Base 2.Emitter 3.Collector
SOT-523 Plastic Package

Absolute Maximum Ratings (T_a = 25℃)

Parameter	Symbol	Value	Unit
Collector Emitter Voltage	V_{CEO}	50	V
Input Voltage	V_I	- 10 to + 40	V
Collector Current	I_C	100	mA
Power Dissipation	P_{tot}	150	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

Characteristics at T_a = 25℃

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 5 V, I_C = 5 mA	h_{FE}	30	-	-	-
Collector Base Cutoff Current at V_{CB} = 50 V	I_{CBO}	-	-	500	nA
Emitter Base Cutoff Current at V_{EB} = 5 V	I_{EBO}	-	-	0.88	mA
Collector Emitter Saturation Voltage at I_C = 10 mA, I_B = 0.5 mA	$V_{CE(sat)}$	-	-	0.3	V
Input on Voltage at V_{CE} = 0.3 V, I_C = 10 mA	$V_{I(on)}$	-	-	3	V
Input off Voltage at V_{CE} = 5 V, I_C = 100 μA	$V_{I(off)}$	0.5	-	-	V
Transition frequency at V_{CE} = 10 V, -I_E = 5 mA, f = 100 MHz	f_T	-	250	-	MHz
Input Resistance	R_1	7	10	13	KΩ
Resistance Ratio	R_2 / R_1	0.8	1	1.2	-

MMDTC114EE

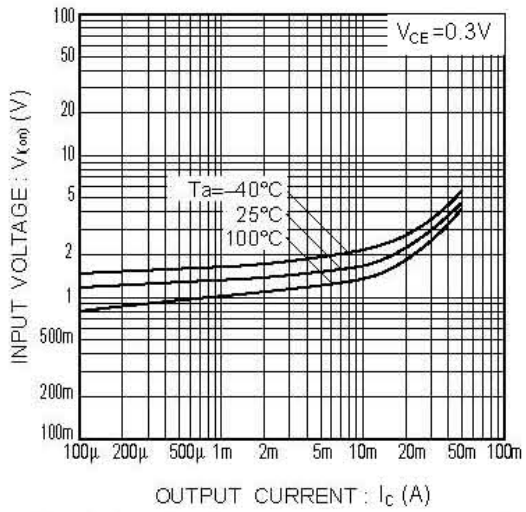


Fig.1 Input voltage vs. output current (ON characteristics)

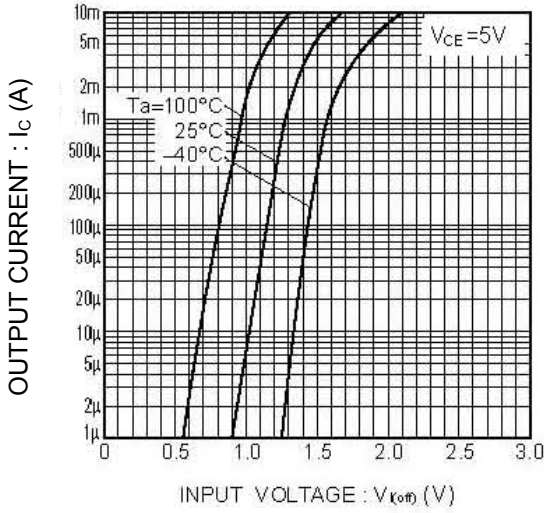


Fig.2 Output current vs. input voltage (OFF characteristics)

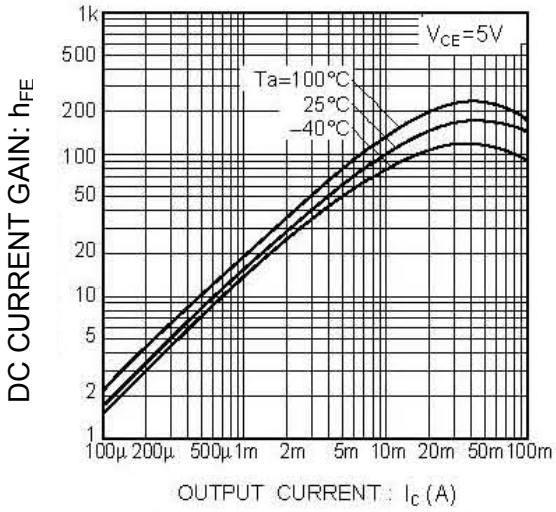


Fig.3 DC current gain vs. output current

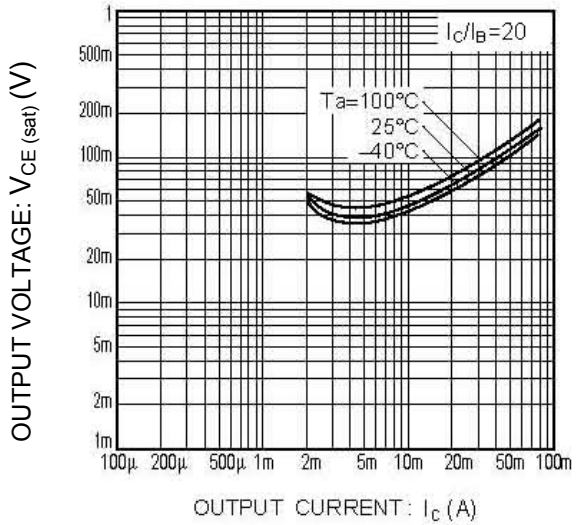
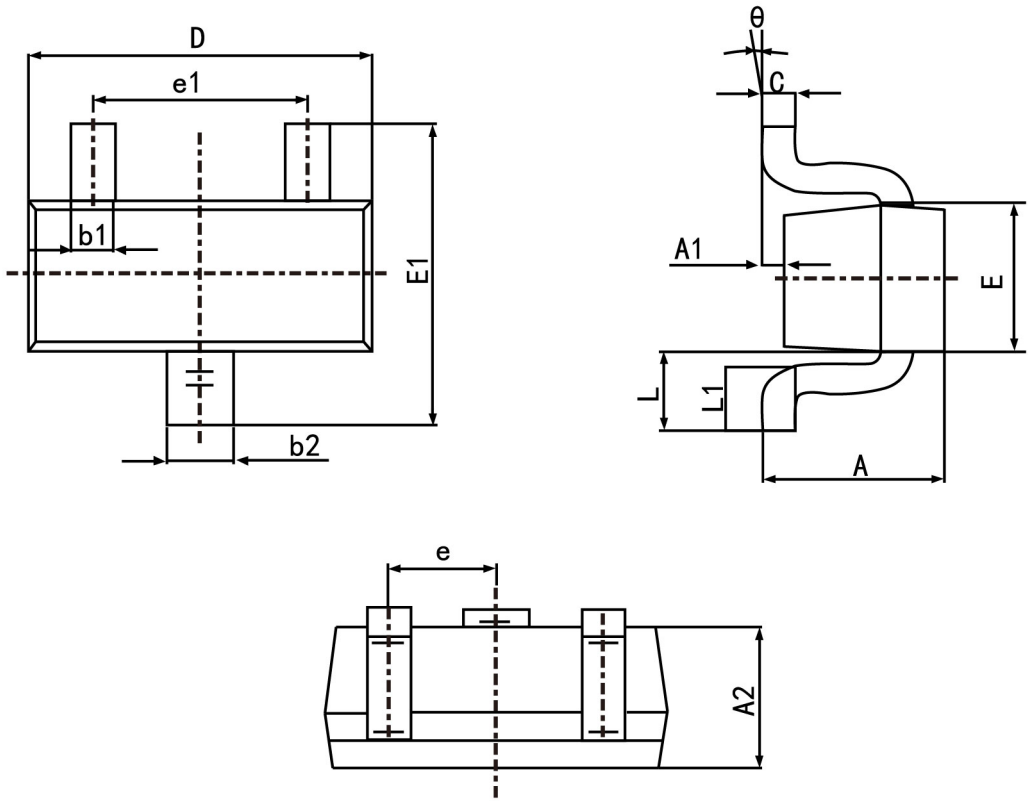


Fig.4 Output voltage vs. output current

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-523**



Symbol	Dimension in Millimeters	
	Min	Max
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
c	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500	TYP.
e1	0.900	1.100
L	0.400 REF.	
L1	0.260	0.460
θ	0°	8°