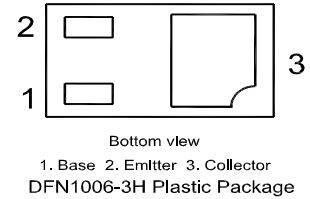
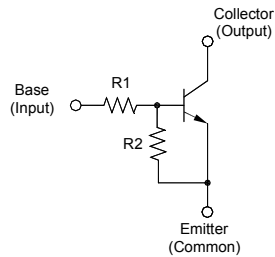


MMDTC114YHP

NPN Silicon Epitaxial Planar Digital Transistor

Features

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



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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	50	V
Collector Emitter Voltage	V_{CEO}	50	V
Base Emitter Voltage	V_{EBO}	10	V
Input Voltage	V_I	- 6 to + 40	V
Collector Current	I_C	100	mA
Peak Collector Current	I_{CM}	100	mA
Power Dissipation	P_{tot}	150	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

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}	100	-	-	-
Collector Base Cutoff Current at $V_{CB} = 50\text{ V}$	I_{CBO}	-	-	0.1	μA
Collector Emitter Cutoff Current at $V_{CE} = 30\text{ V}$	I_{CEO}	-	-	1	μA
Emitter Base Cutoff Current at $V_{EB} = 5\text{ V}$	I_{EBO}	-	-	150	μA
Collector Emitter Saturation Voltage at $I_C = 5\text{ mA}$, $I_B = 0.25\text{ mA}$	$V_{CE(sat)}$	-	-	0.1	V
Input on Voltage at $V_{CE} = 0.3\text{ V}$, $I_C = 1\text{ mA}$	$V_{I(on)}$	-	-	1.4	V
Input off Voltage at $V_{CE} = 5\text{ V}$, $I_C = 100\text{ }\mu\text{A}$	$V_{I(off)}$	0.5	-	-	V
Collector Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	-	2.5	pF
Transition frequency at $V_{CE} = 5\text{ V}$, $-I_C = 10\text{ mA}$, $f = 100\text{ MHz}$	f_T	-	230	-	MHz
Input Resistance	R_1	7	10	13	K Ω
Resistance Ratio	R_2 / R_1	3.7	4.7	5.7	-

TOP DYNAMIC

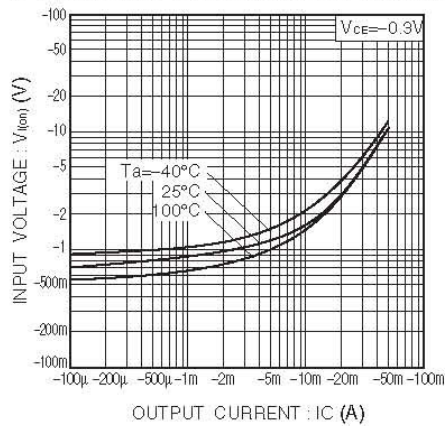


Fig.1 Input voltage vs. output current (ON characteristics)

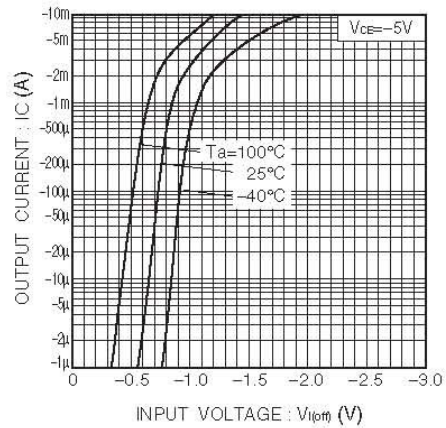


Fig.2 Output current vs. input voltage (OFF characteristics)

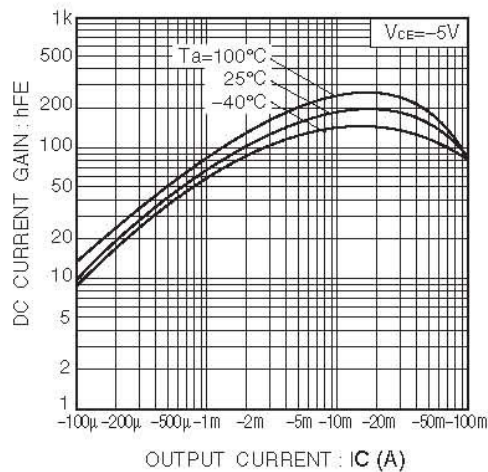


Fig.3 DC current gain vs. output current

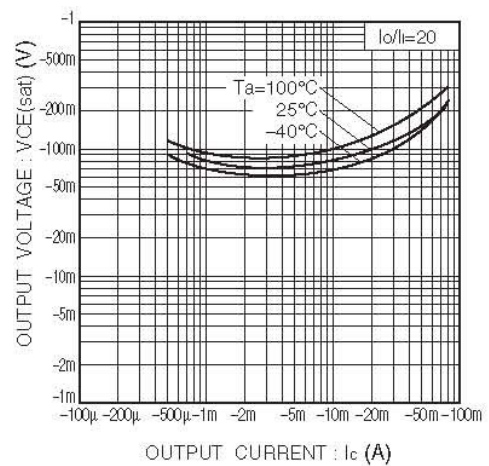


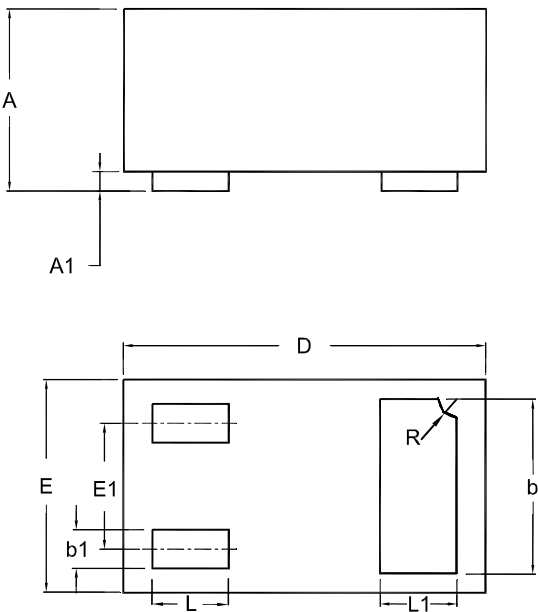
Fig.4 Output voltage vs. output current

MMDTC114YHP

PACKAGE OUTLINE

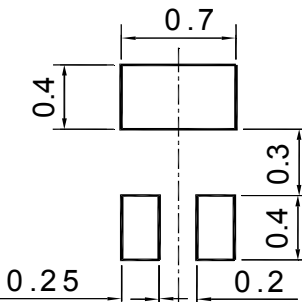
Plastic surface mounted package

DFN1006-3H



UNIT	A	A1	b	b1	D	E	E1	L	L1	R
mm	0.51 0.46	0.05 0	0.55 0.45	0.2 0.1	1.05 0.95	0.65 0.55	0.325	0.3 0.2	0.3 0.2	0.15 0.05

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
DFN1006-3H	8	4 ± 0.1	0.157 ± 0.004	178	7	5,000

TOP DYNAMIC