沛倫股份有限公司
Compact Technology Corp.

MMBT2222A

NPN GENERAL PURPOSE SWITCHING TRANSISTOR

VOLTAGE **- 40** Volts
POWER **- 225mWatts**

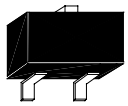
FEATURES

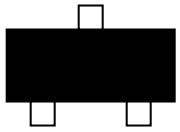
- NPN epitaxial silicon planar design
- Collector - emmiter voltage VCE= 40V
- Collector current IC=600mA
- In compliance with EU Rohs 2002/95/EC directives

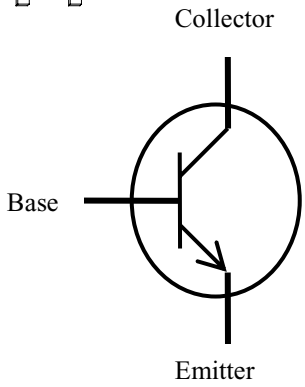
MECHANICAL DATA

- Case : SOT-23 plastic
- Terminals : Solderable Per MIL-STD-750, Method 2026
- Approx Weight : 0.08 grams
- Marking : M2A

SOT-23







Absolute Maximum Ratings

PARAMETER	SYMBOL	VALUE	UNIT
Collector - Emitter voltage	VCEO	40	V
Collector - Base voltage	VCBO	75	V
Emitter - Base voltage	VEB	6.0	V
Collector current - continuous	IC	600	mA

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT
Max Power Dissipation (Note1)	PTOT	225	mW
Theraml resistance , Junction to ambient	$R\theta TA$	556	℃/W
Junction temperature	TJ	-55 to 150	℃
Storage temperature	TSTG	-55 to 150	℃

Note1. Transistor mounted on FR-5 board 1.0 X 0.75 X 0.062 inch

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector - Emitter breakdown voltage	V(BR)CEO	IC=1.0mA, IB=0	40	-	-	V
Collector - Base breakdown voltage	V(BR)CBO	IC=10uA, IE=0	75	-	-	V
Emitter - Base breakdown voltage	V(BR)EBO	IC=10uA, IC=0	6	-	-	V
Base cutoff current	IBL	VCE=60V, VEB=3V	-	-	20	nA
Collector cutoff current	ICEX	VCE=60V, VEB=3V	-	-	10	nA
	ICBO	VCE=60V, IE=0			10	nA
Emitter cutoff current	IEBO	VEB=3V, IC=0	-	-	100	nA
DC current gain	HFE	IC=0.1mA, VCE=10V IC=1.0mA, VCE=10V IC=10mA, VCE=10V, IC=10mA, VCE=10V, TJ=125℃ IC=150mA, VCE=10V IC=150mA, VCE=1V IC=500mA, VCE=10V	35 50 75 35 100 50 40	-	- - - - 300 -	
Collector -Emitter saturation voltage	VCE(SAT)	IC=150mA, IB=15mA IC=500mA, IB=50mA	-	-	0.3 1.0	V
Base - Emitter saturation voltage	VBE(SAT)	IC=150mA, IB=15mA IC=500mA, IB=50mA	0.6 -	-	1.2 2.0	V
Collector - Base capacitance	CCBO	VCB=10V, IE=0, F=1MHz	-	-	8.0	pF
Emitter -Base capacitance	CEBO	VCB=0.5V, IC=0, F=1MHz	-	-	25	pF
Delay time	td	VCC=3V, VBE=-5V IC=150mA, IB=15mA	-	-	10	nS
Rise time	tr	VCC=3V, VBE=-5V IC=150mA,IB=15mA	-	-	25	nS
Storge time	ts	VCC=30V, IC=150mA IB1=IB2=15mA,	-	-	225	nS
Fall time	tf	VCC=30V, IC=150mA IB1=IB2=15mA,	-	-	60	nS

Note2. Pulse test : pulse width < 300us, duty cycle < 2.0%

Switching time equivalent test circuits

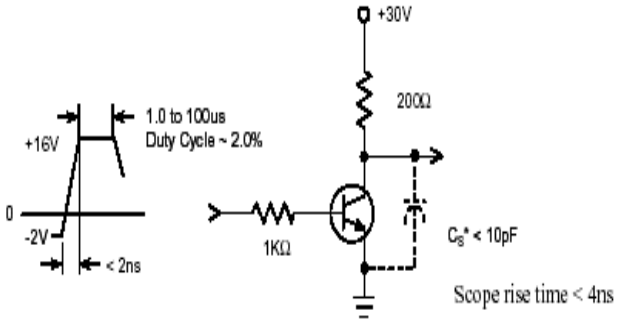


Fig. 1. Turn-On Time

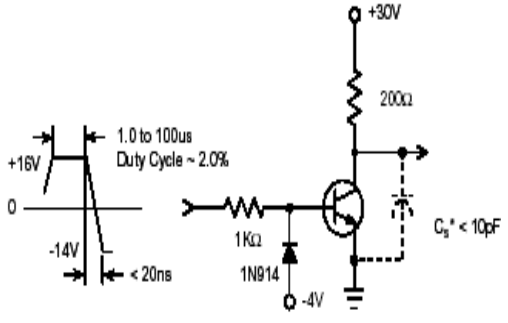
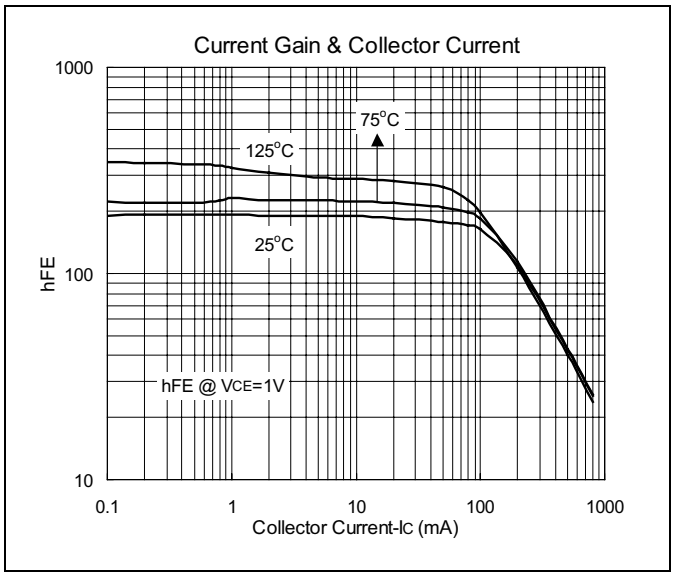
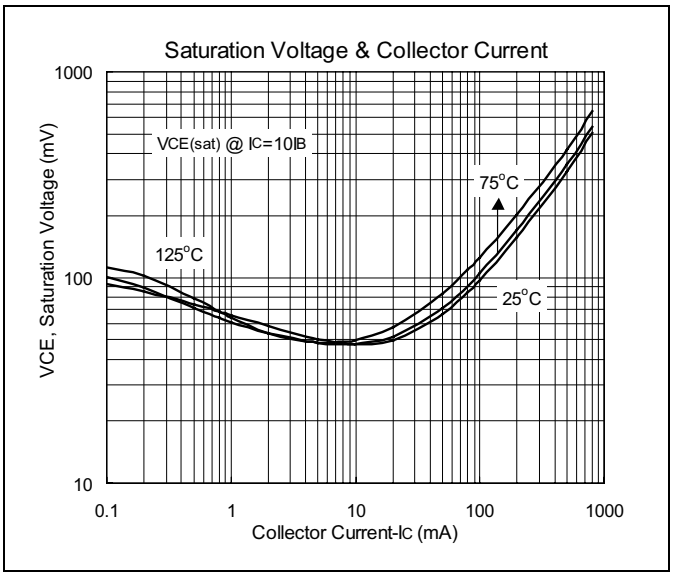


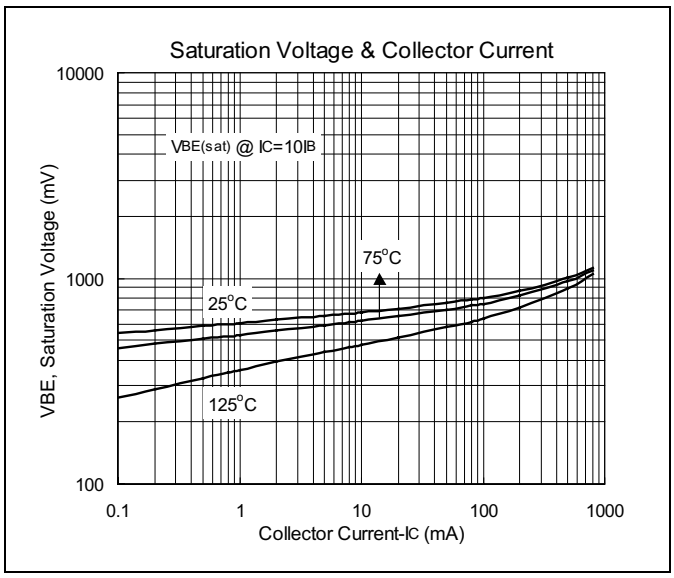
Fig. 2. Turn-Off Time

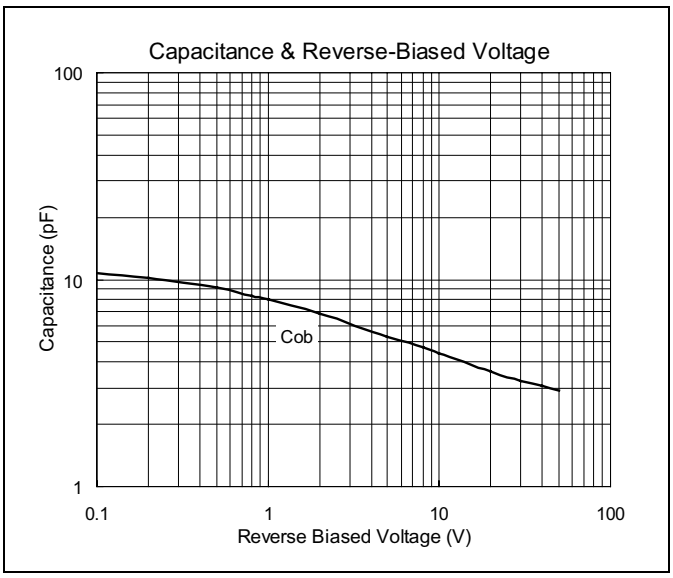
* Total shunt capacitance of test jig, connectors, and oscilloscope

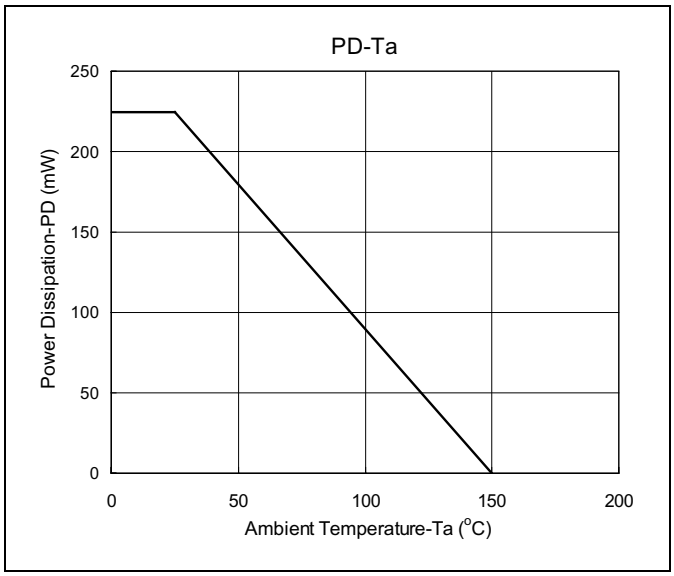
Characteristics Curve



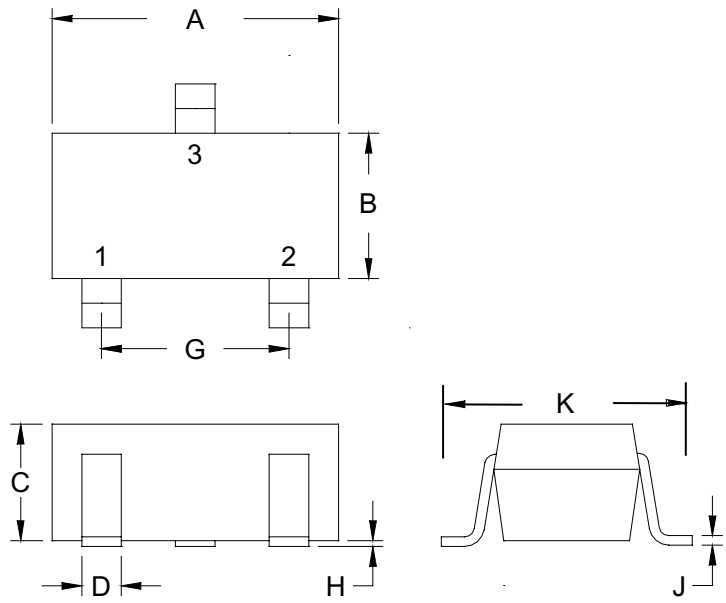




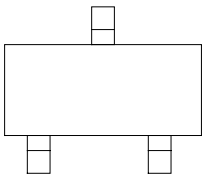




SOT-23 Dimension



Marking:



3-Lead SOT-23 Plastic
Surface Mounted Package

Style: Pin 1.Base 2.Emitter 3.Collector

DIM	Inches		Millmeters	
	MIN.	MAX.	MIN.	MAX.
A	0.106	0.122	2.70	3.10
B	0.047	0.063	1.20	1.60
C	0.035	0.051	0.90	1.30
D	0.013	0.020	0.35	0.50
G	0.066	0.083	1.70	2.10
H	-	0.006	-	0.15
J	0.002	0.006	0.05	0.15
K	0.086	0.110	2.20	2.80