

**NPN Silicon Transistor** 

#### Descriptions

- General purpose application
- Switching application

#### Features

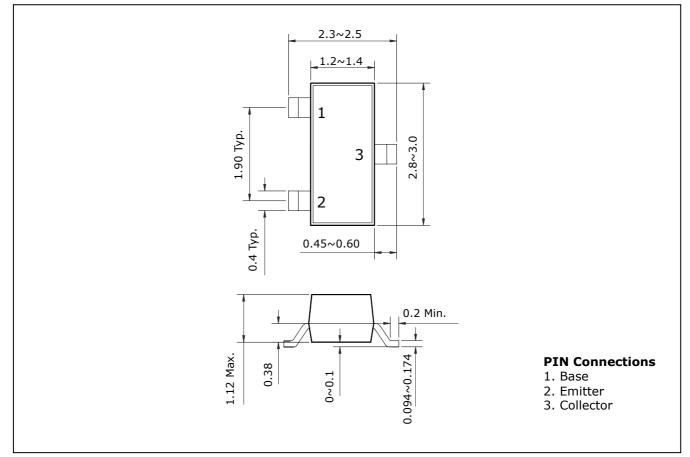
- Low Leakage current
- Low collector saturation voltage enabling low voltage operation
- Complementary pair with MMBT2907A

## **Ordering Information**

Type NO.	Marking	Package Code		
MMBT2222A	1P	SOT-23		

## **Outline Dimensions**

unit : mm



## Absolute maximum ratings

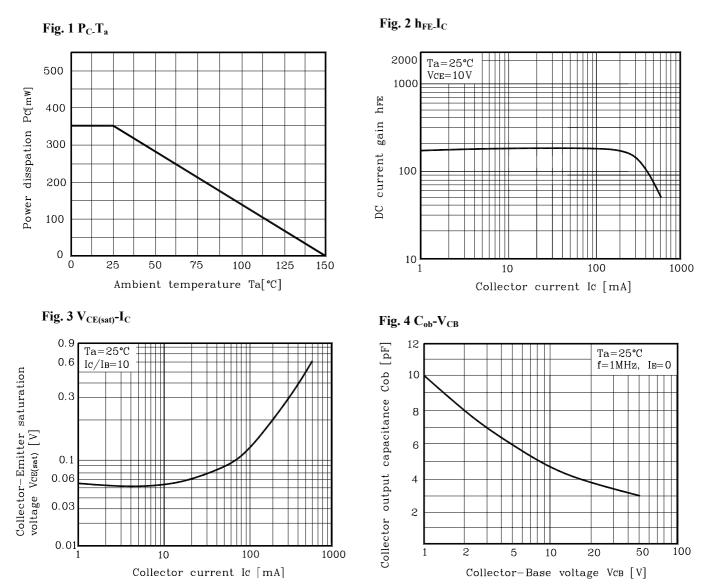
Absolute maximum ratings	Ta=25°C		
Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	V <sub>CBO</sub>	75	V
Collector-Emitter voltage	V <sub>CEO</sub>	40	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>C</sub>	600	mA
Collector dissipation	P <sub>C</sub> *	350	mW
Junction temperature	Tj	150	°C
Storage temperature range	T <sub>stg</sub>	-55~150	°C

\* : Package mounted on 99.5% alumina 10×8×0.6mm

### **Electrical Characteristics**

Electrical Characteristics						Ta=25°C	
Characteristic	Symbol	<b>Test Condition</b>	Min.	Тур.	Max.	Unit	
Collector-Base breakdown voltage	$BV_{CBO}$	$I_{C}=10\mu A$ , $I_{E}=0$	75	-	-	V	
Collector-Emitter breakdown voltage	$BV_{CEO}$	$I_{C}=1mA$ , $I_{B}=0$	40	-	-	V	
Emitter-Base breakdown voltage	$BV_{EBO}$	$I_{E}$ =10 $\mu$ A, $I_{C}$ =0	5	-	-	V	
Collector cut-off current	$I_{CBO}$	V <sub>CB</sub> =75V, I <sub>E</sub> =0	-	-	20	nA	
DC current gain	h <sub>FE</sub>	$V_{CE}$ =10V, $I_{C}$ =10mA	100	-	-	-	
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_{C}$ =150mA, $I_{B}$ =15mA	-	-	0.4	V	
Transition frequency	$f_{T}$	V <sub>CE</sub> =20V, I <sub>C</sub> =20mA, f=100MHz	250	-	-	MHz	
Collector output capacitance	C <sub>ob</sub>	$V_{CB}$ =10V, $I_{E}$ =0, f=1MHz	-	-	8	pF	
Delay time	t <sub>d</sub>	$V_{CC}=30V_{dc}, V_{BE(off)}=0.5V_{dc},$	-	-	10	ns	
Rise time	t <sub>r</sub>	$I_C = 150 \text{mA}_{dc}, I_{B1} = 15 \text{mA}_{dc}$	-	-	25	ns	
Storage time	t <sub>s</sub>	$V_{CC}=30V_{dc}$ , $I_{C}=150mA_{dc}$ ,	-	-	225	ns	
Fall Time	t <sub>f</sub>	$I_{B1}=I_{B2}=15mA_{dc}$	-	-	60	ns	

## **Electrical Characteristic Curves**



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