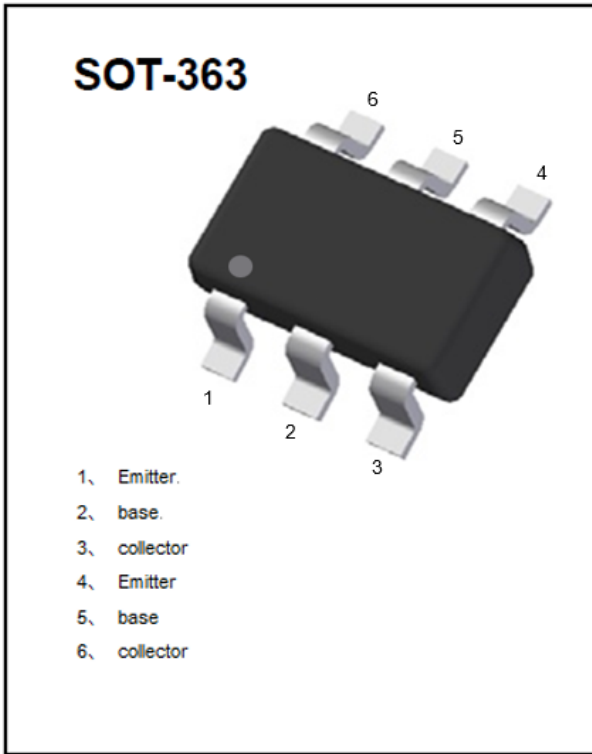


## Dual NPN Small Signal Transistor



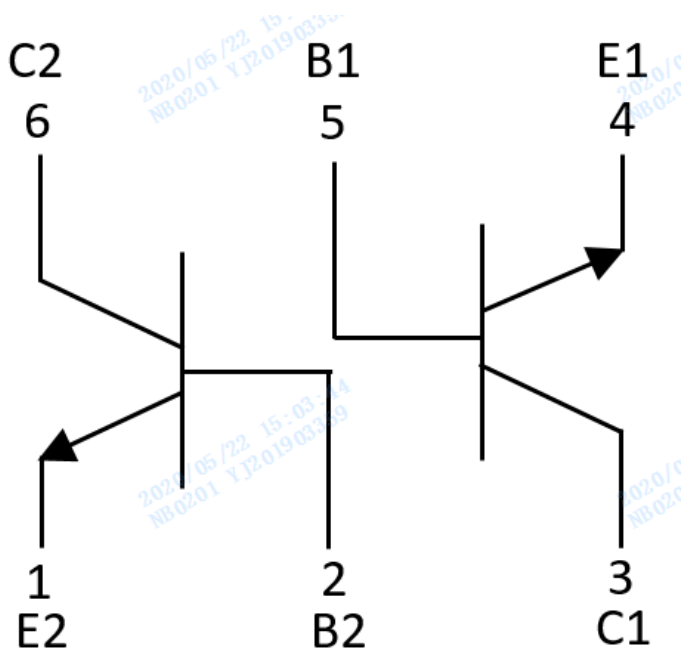
### Features

- Epoxy meets UL-94 V-0 flammability rating
- Surface mount package ideally Suited for Automatic Insertion
- NPN

### Mechanical Data

- **Package:** SOT-363
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** K1P

### Equivalent circuit





# MMDT2222A

## ■Maximum Ratings (Ta=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	VCBO	V	IC=10μA,IE=0	75
Collector-Emitter Voltage	VCEO	V	IC=10mA,IB=0	40
Emitter-Base Voltage	VEBO	V	IE=10μA,IC=0	6
Collector Current -Continuous	IC	mA		600
Total Device Dissipation	PC	mW		200
Junction Temperature	Tj	°C		150
Storage Temperature	TSTG	°C		-55 to +150

## ■Electrical Characteristics (Ta=25°C unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	TYP	Max	
Collector-base breakdown voltage	VCBO	V	IC=10μA,IE=0	75			
Collector-emitter breakdown voltage	VCEO	V	IC=10mA,IB=0	40			
Emitter-base breakdown voltage	VEBO	V	IE=10μA,IC=0	6			
Collector cut-off current	ICBO	nA	VCB=60V,IE=0			10	
Collector cut-off current	ICEX	nA	VCE=60V,VEB(off)=3V			10	
Emmitter cut-off current	IEBO	nA	VEB=3V, IC=0			10	
Base cut-off Current	IBL	nA	VCE=60V,VEB(off)=3V			20	
DC current gain	hFE1		VCE=10V,IC=0.1mA	35			
	hFE2		VCE=10V,IC=1mA	50			
	hFE3		VCE=10V,IC=10mA	75			
	hFE4		VCE=10V,IC=150mA	100		300	
	hFE5		VCE=1V,IC=150mA	35			
	hFE6		VCE=10V,IC=500mA	40			
Collector-emitter saturation voltage	VCE(sat)	V	IC=150mA,IB=15mA			0.3	
Collector-emitter saturation voltage	VCE(sat)	V	IC=500mA,IB=50mA			1	
Base-emitter saturation voltage	VBE(sat)	V	IC=150mA,IB=15mA			1.2	
Base-emitter saturation voltage	VBE(sat)	V	IC=500mA,IB=50mA			2	
Transition frequency	fT	MHz	VCE=20V,IC=20mA,f=100MHz	300			
Delay time	td	ns	VCC=30V,IC=150mA, IB1=15mA,VBE(off)=-0.5V			10	
Rise time	tr	ns					25
Storage time	ts	ns					225
Fall time	tf	ns					60



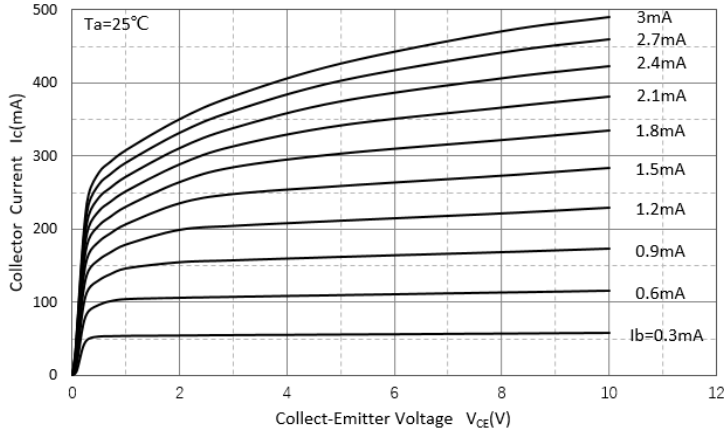
# MMDT2222A

## Ordering Information (Example)

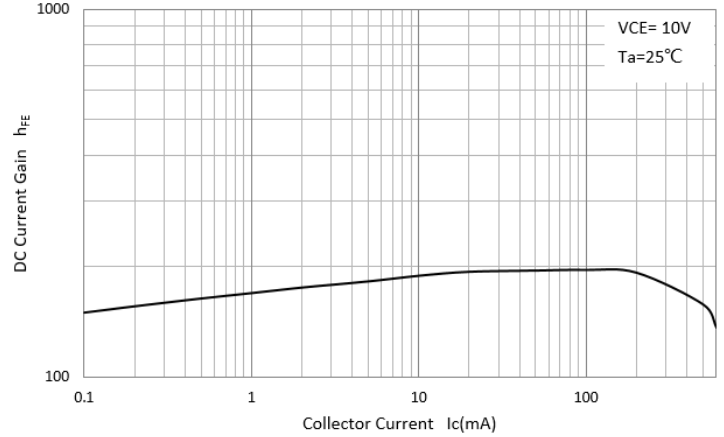
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMDT2222A	F2	Approximate 0.009g	3000	30000	120000	7" reel

## Characteristics (Typical)

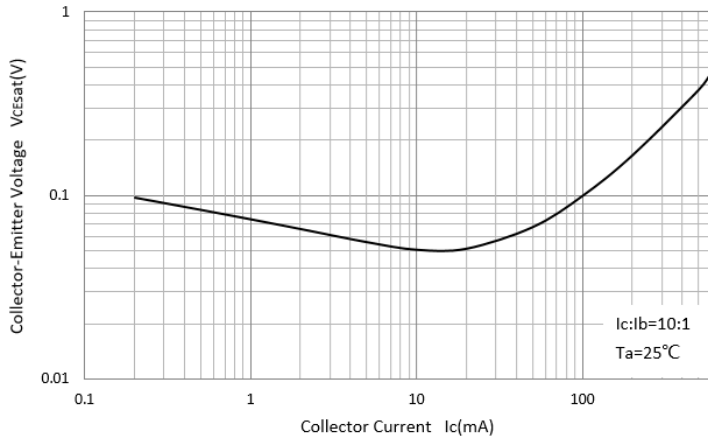
Static Characteristic



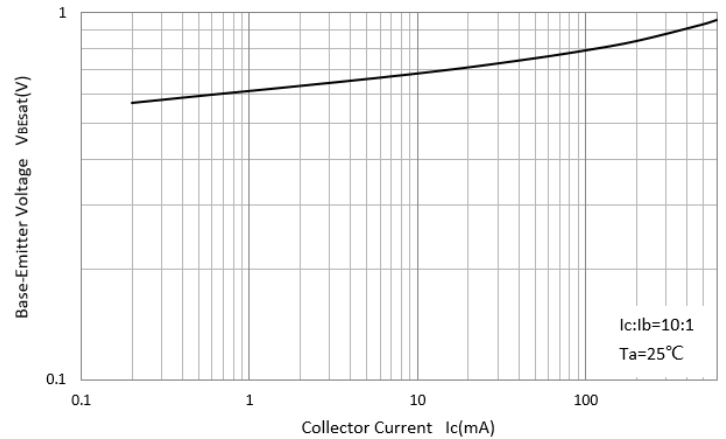
DC Current Gain



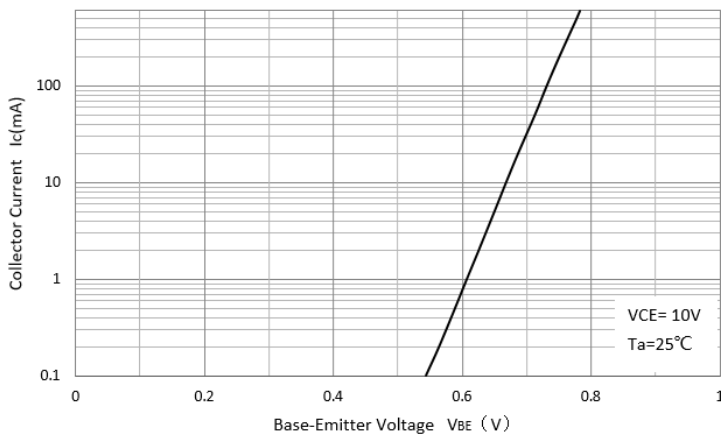
Collector-Emmitter Saturation Voltage



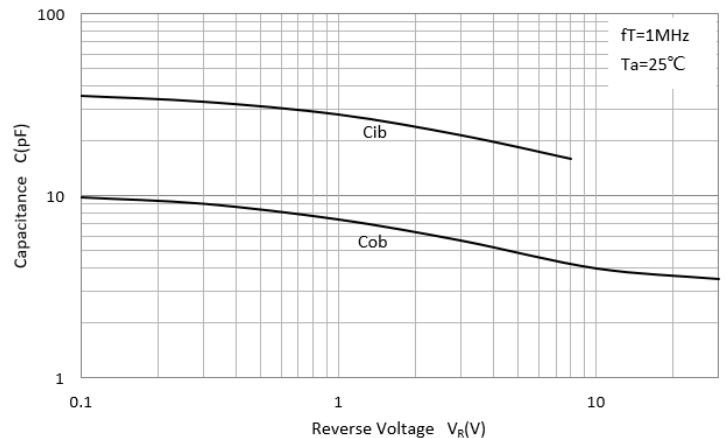
Base-Emmitter Saturation Voltage



Base-Emmitter On Voltage



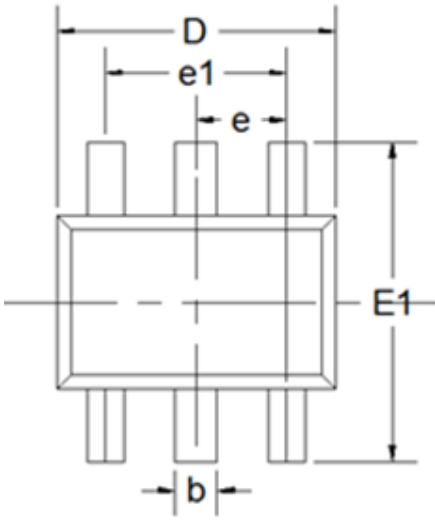
Cob/Cib- $V_{CB}/V_{EB}$



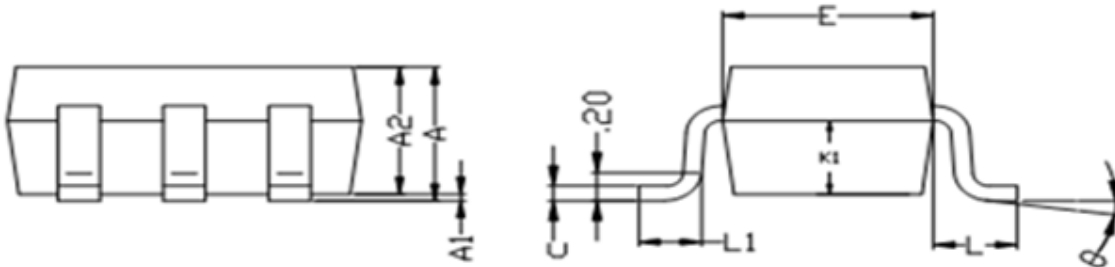


# MMDT2222A

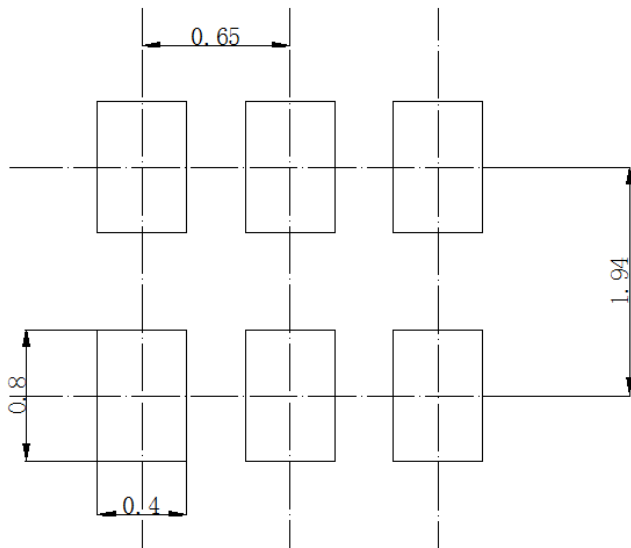
## ■SOT-363 Package Outline Dimensions



DIM	DIMENSIONS			
	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.035	0.043	0.9	1.1
A1	0	0.004	0	0.1
A2	0.035	0.039	0.9	1
b	0.006	0.014	0.15	0.35
c	0.002	0.01	0.05	0.25
D	0.071	0.087	1.8	2.2
E	0.045	0.053	1.15	1.35
E1	0.085	0.096	2.15	2.45
e	0.026Typ		0.65Typ	
e1	0.047	0.055	1.2	1.4
L	0.021Typ		0.525Typ	
L1	0.01	0.018	0.26	0.46
φ	0°	8°	0°	8°



## ■SOT-363 Soldering Footprint



Unit: mm



## MMDT2222A

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