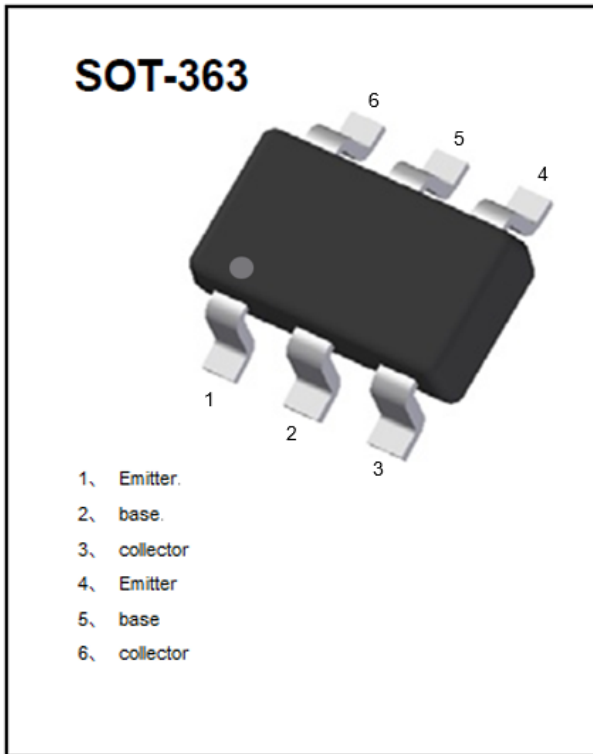


## Dual NPN Small Signal Transistor



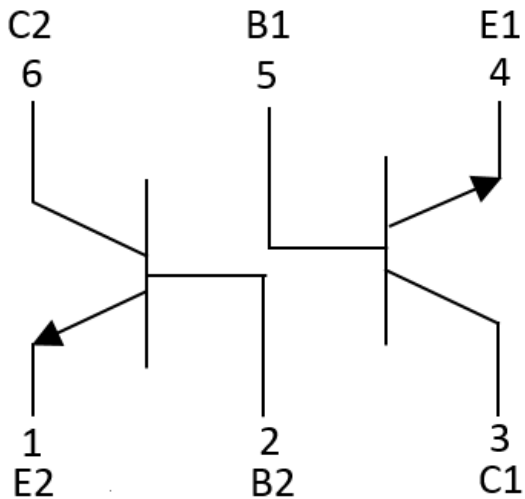
### Features

- 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:** K6N

### ■Equivalent circuit





# MMDT3904

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

Item	Symbol	Unit	Conditions	Value
Collector-Emitter Voltage	$V_{CEO}$	V	$I_C=1\text{mA}, I_B=0$	40
Collector-Base Voltage	$V_{CBO}$	V	$I_C=10\mu\text{A}, I_E=0$	60
Emitter-Base Voltage	$V_{EBO}$	V	$I_E=10\mu\text{A}, I_C=0$	6
Collector Current	$I_C$	mA		200
Collector Power Dissipation	$P_C$	mW		200
Junction Temperature	$T_J$	°C		-55 to +150
Storage Temperature	$T_{stg}$	°C		-55 to +150

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

Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	$V_{CBO}$	V	$I_C=10\mu\text{A}, I_E=0$	60		
Collector-emitter breakdown voltage	$V_{CEO}$	V	$I_C=1\text{mA}, I_B=0$	40		
Emitter-base breakdown voltage	$V_{EBO}$	V	$I_E=10\mu\text{A}, I_C=0$	6		
Collector-Base cut-off current	$I_{CBO}$	nA	$V_{CB}=30\text{V}, I_E=0$			50
Collector-Emitter cut-off current	$I_{CEO}$	nA	$V_{CE}=30\text{V}, I_B=0$			50
Emitter-Base Cut-off current	$I_{EBO}$	nA	$V_{EB}=5\text{V}, I_C=0$			50
DC current gain	$h_{FE(1)}$		$V_{CE}=1\text{V}, I_C=10\text{mA}$	100		300
	$h_{FE(2)}$		$V_{CE}=1\text{V}, I_C=50\text{mA}$	60		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=10\text{mA}, I_B=1\text{mA}$			0.2
			$I_C=50\text{mA}, I_B=5\text{mA}$			0.3
Baser-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C=10\text{mA}, I_B=1\text{mA}$	0.65		0.85
			$I_C=50\text{mA}, I_B=5\text{mA}$			0.95
Collector-base Output Capacitance	$C_{obo}$	pF	$V_{CB}=5.0\text{Vdc}, f=1.0\text{MHz}, I_E=0$			4
Transition frequency	$f_T$	MHz	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	300		
Noise figure	NF	dB	$V_{CE}=5\text{V}, I_C=0.1\text{mA}, f=1\text{kHz}, R_g=1\text{K}\Omega$			5

## ■ Ordering Information (Example)

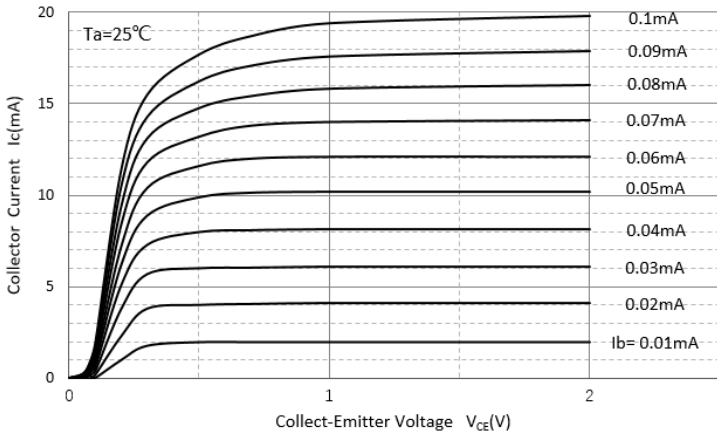
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMDT3904	F2	Approximate 0.009g	3000	30000	120000	7" reel



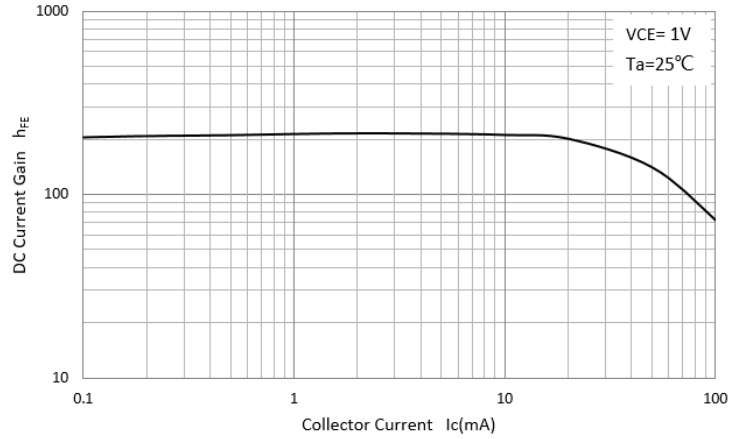
# MMDT3904

## ■ Characteristics (Typical)

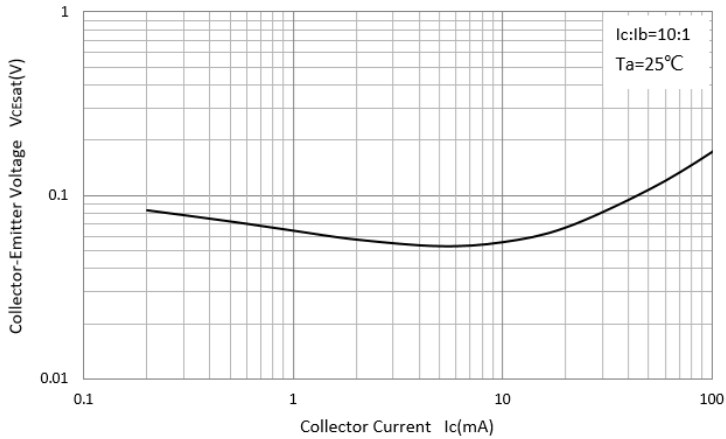
### Static Characteristic



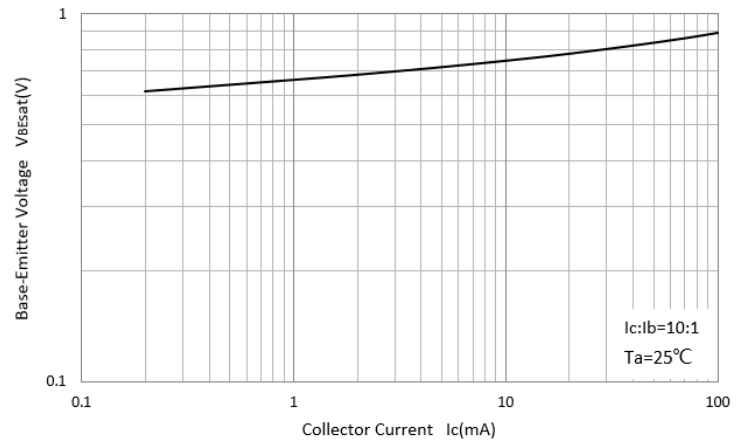
### DC Current Gain



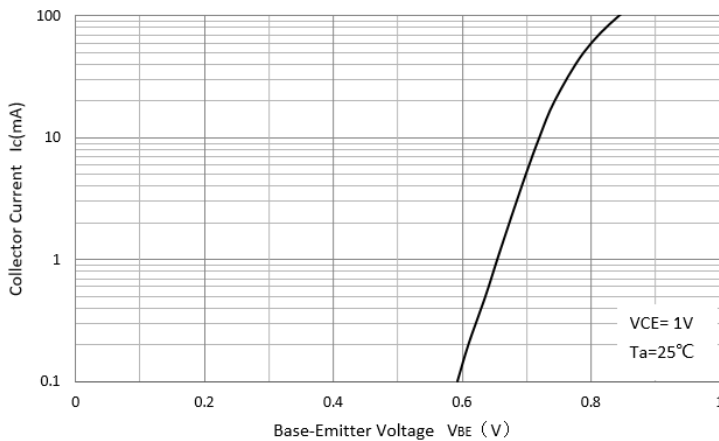
### Collector-Emmitter Saturation Voltage



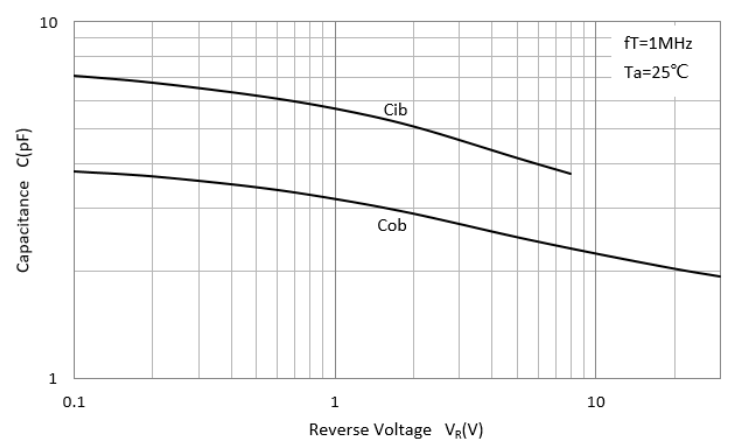
### Base-Emmitter Saturation Voltage



### Base-Emmitter On Voltage



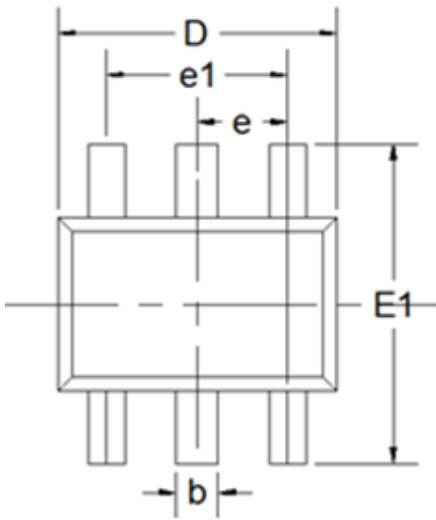
### $C_{ob}/C_{ib}-V_{CB}/V_{EB}$



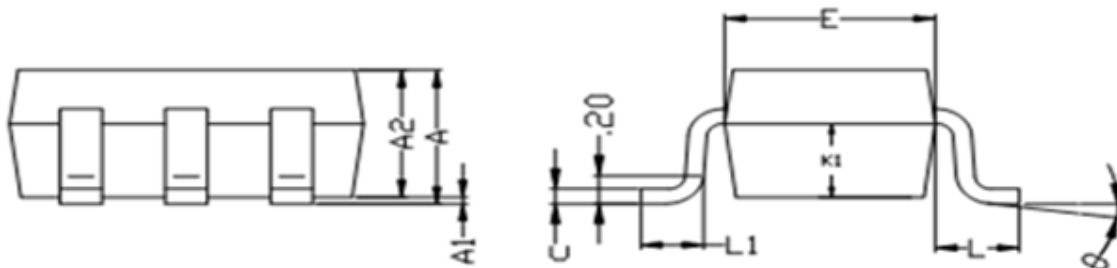


# MMDT3904

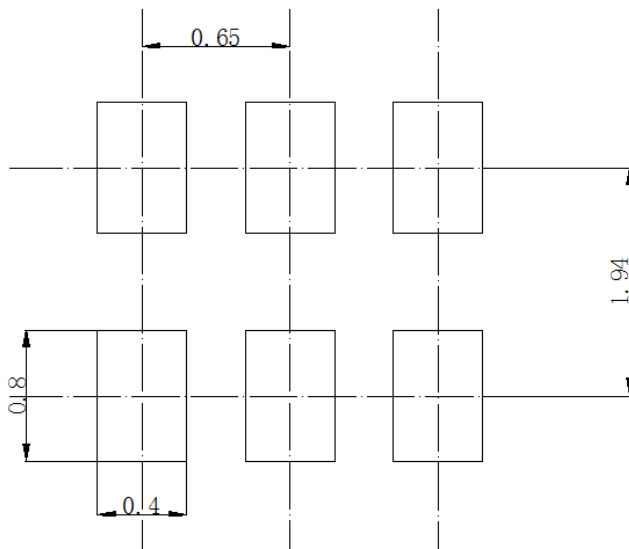
## ■SOT-363 Package Outline Dimensions



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



## MMDT3904

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