

## Dual NPN+PNP Small Signal Transistor



### Features

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

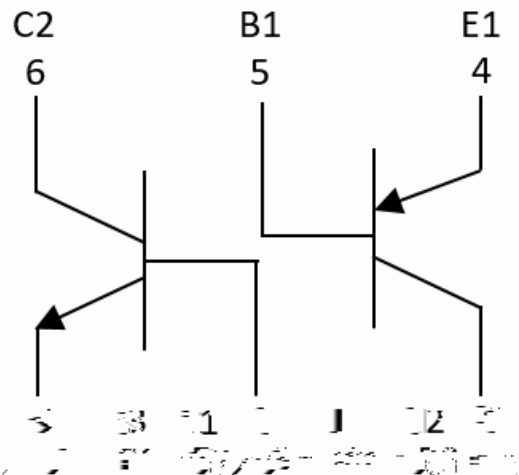
### Mechanical Data

**Package:** SOT-363

**Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

**Marking:** K13

### Equivalent circuit



### Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMDT4413	F2	Approximate 0.009g	3000	30000	120000	7" reel



# MMDT4413

## TR1 PNP Pin3 4 5 Maximum Ratings (Ta=25 Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	$V_{CBO}$	V	$I_C=-100\text{ A}, I_E=0$	-40
Collector-Emitter Voltage	$V_{CEO}$	V	$I_C=-1\text{ mA}, I_B=0$	-40
Emitter-Base Voltage	$V_{EBO}$	V	$I_E=-100\text{ A}, I_C=0$	-5
Collector Current -Continuous	$I_C$	mA		-200
Total Device Dissipation	$P_C$	mW		200
Junction Temperature	$T_j$			150
Storage Temperature	$T_{STG}$			-55 to +150

## TR1 PNP Pin3 4 5 Electrical Characteristics (Ta=25 unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	$V_{CBO}$	V	$I_C=-100\text{ A}, I_E=0$	-40		
Collector-emitter breakdown voltage	$V_{CEO}$	V	$I_C=-1\text{ mA}, I_B=0$	-40		
Emitter-base breakdown voltage	$V_{EBO}$	V	$I_E=-100\text{ A}, I_C=0$	-5		
Collector cut-off current	$I_{CBO}$	nA	$V_{CB}=-50\text{ V}, I_E=0$			-100
Emmitter cut-off current	$I_{EBO}$	nA	$V_{EB}=-5\text{ V}, I_C=0$			-100

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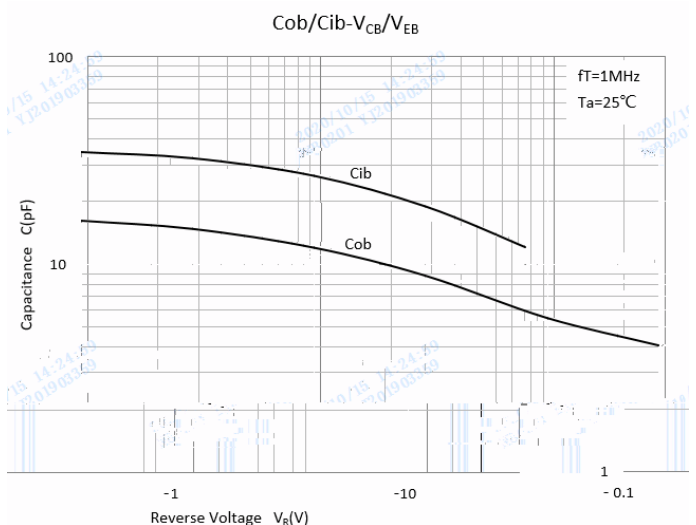
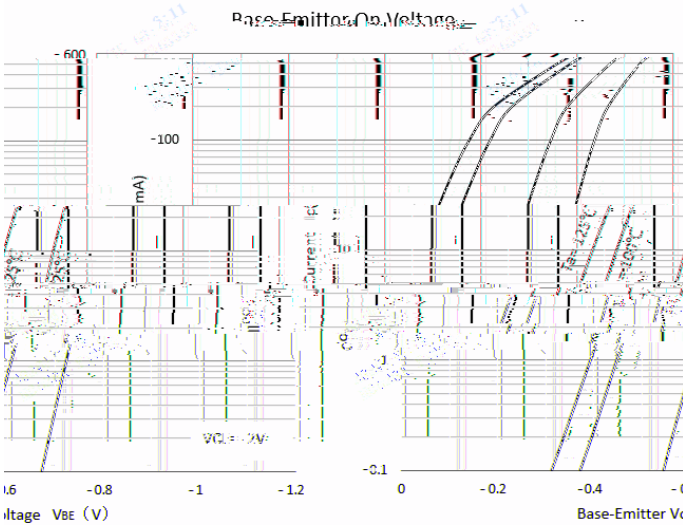
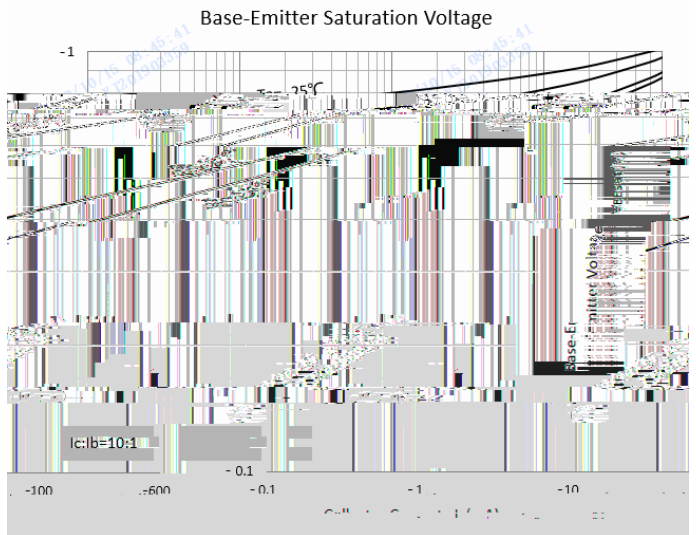
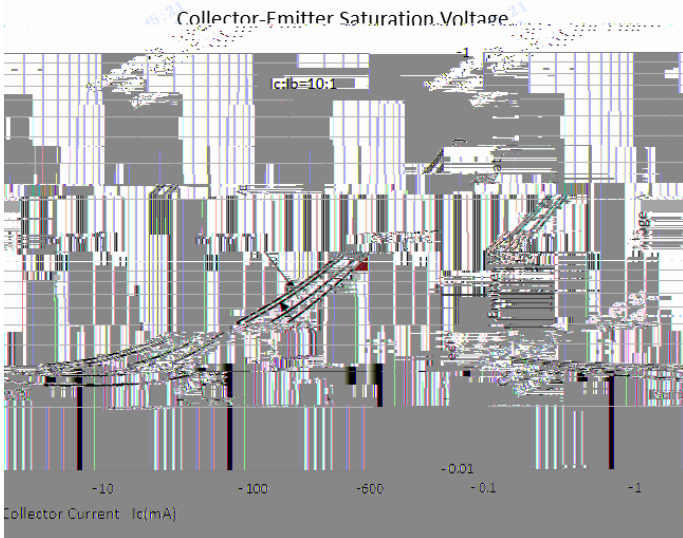
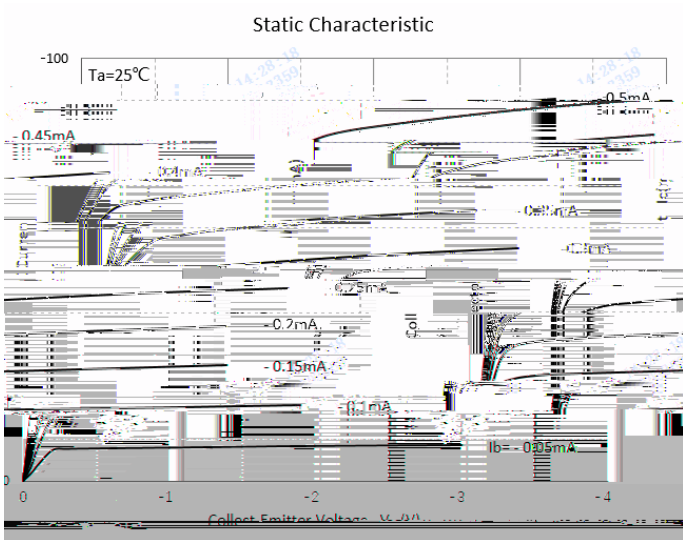
DC current gain





# MMDT4413

## TR1 PNP Pin3 4 5 Characteristics (Typical)

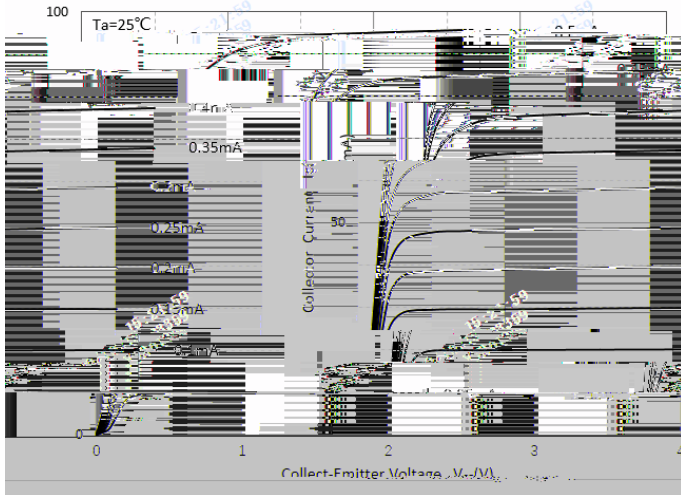




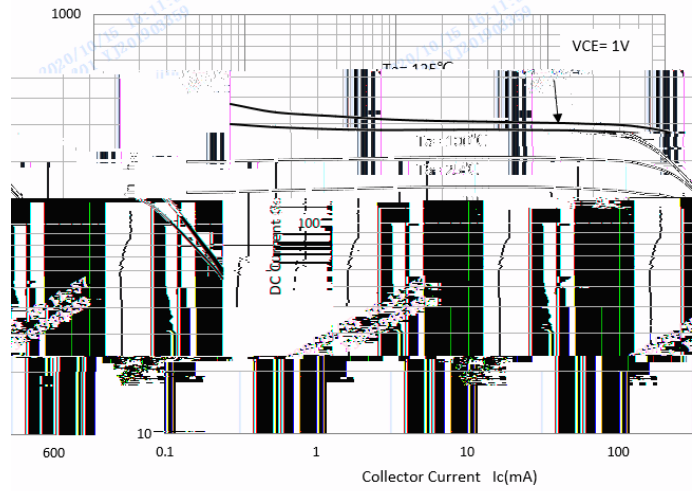
# MMDT4413

## TR2 NPN Pin1 2 6 Characteristics (Typical)

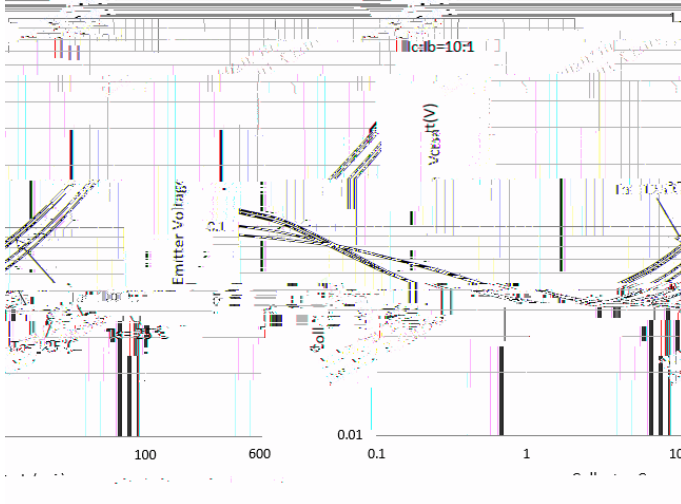
Static Characteristic



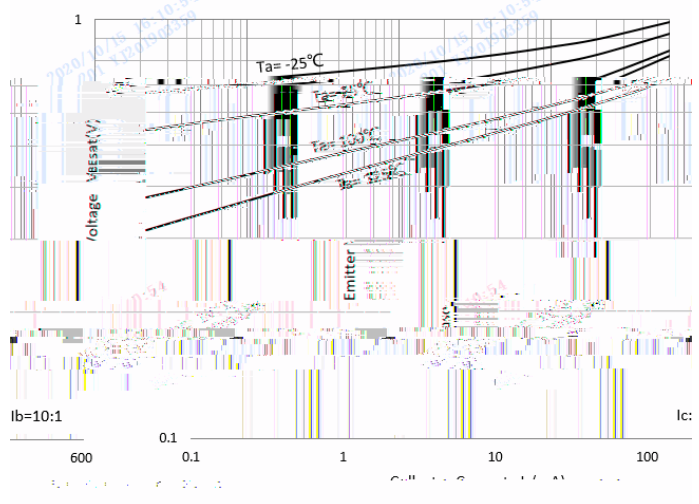
DC Current Gain



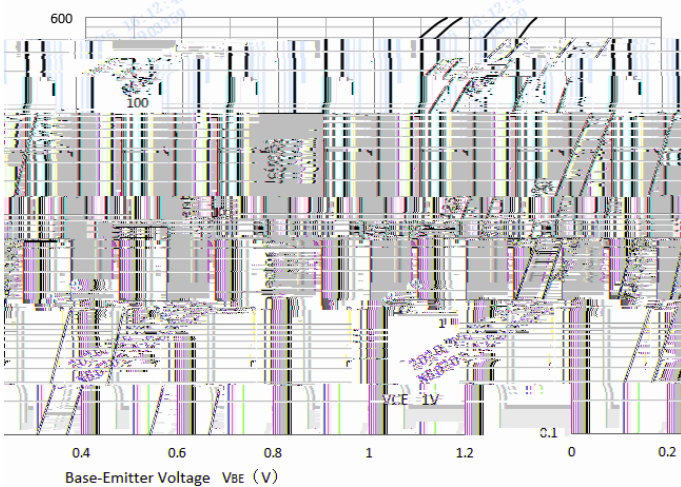
Collector-Emitter Saturation Voltage



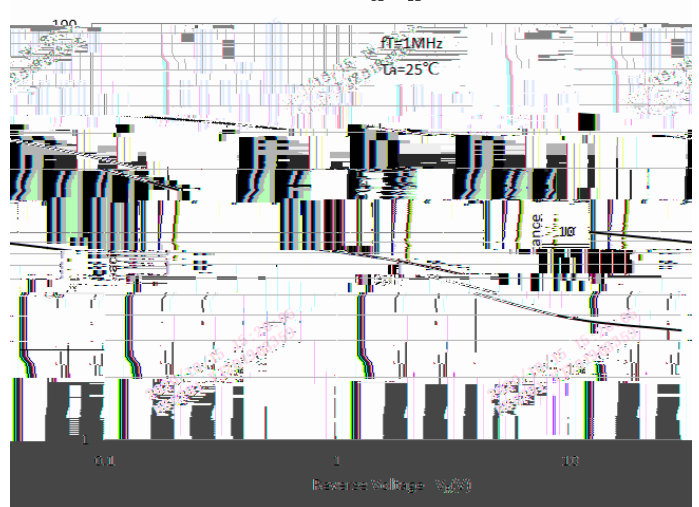
Base-Emitter On Voltage



Base-Emitter On Voltage



Cob/Cib-V<sub>CB</sub>/V<sub>EB</sub>







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