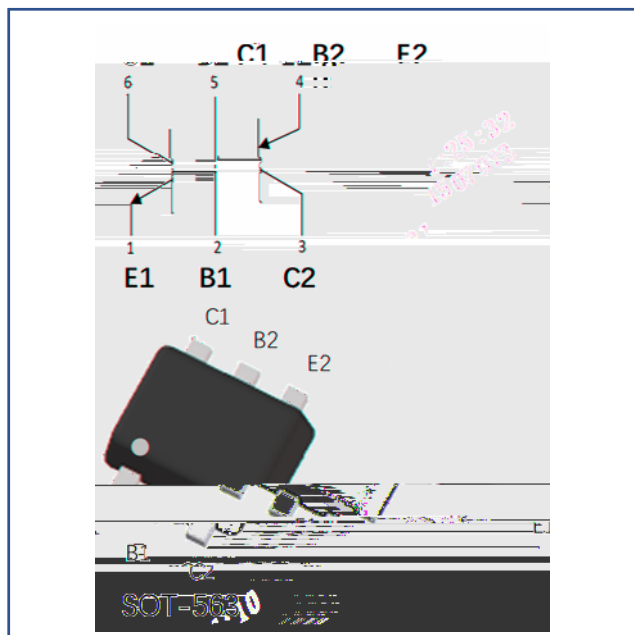




Dual NPN+PNP Small Signal Transistor



Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic Insertion

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package** SOT-563
- **Terminals** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ **Maximum Ratings** ($T_a=25$ Unless otherwise specified)

TR1-NPN

Item	Symbol	Unit	Conditions	Value
Device marking code				K46
Collector-base voltage	V_{CBO}	V	$I_C=10\mu A, I_E=0$	60
Collector-emitter voltage	V_{CEO}	V	$I_C=1mA, I_B=0$	40
Emitter-base voltage	V_{EBO}	V	$I_E=10\mu A, I_C=0$	6
Collector current	I_C	mA		200
Power dissipation	P_D	mW		150
Junction temperature	T_J			-55 to +150
Storage temperature	T_{STG}			-55 to +150



MMDT3946V

RoHS
COMPLIANT

TR2-PNP

Item	Symbol	Unit	Conditions	Value
------	--------	------	------------	-------



MMDT3946V

RoHS
COMPLIANT

Item	Symbol	Unit	Conditions	Min	Typ	Max
Transition frequency	f_T	MHz	$V_{CE}=20V, I_C=20mA, f=100MHz$	300		
Delay time	t_d	ns	$V_{CC}=3V, I_C=10mA, V_{BE}=0.5V,$ $I_{B1}=1mA$			35
Rise time	t_r	ns				35
Storage time	t_s	ns	$V_{CC}=3V, I_C=10mA, I_{B1}=-I_{B2}=1mA$			200
Fall time	t_f	ns				50

TR2-PNP

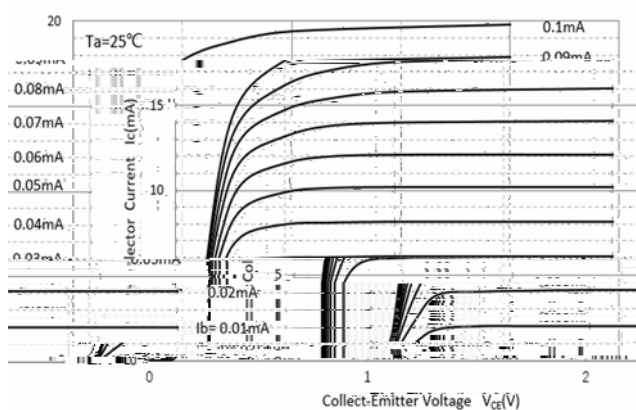
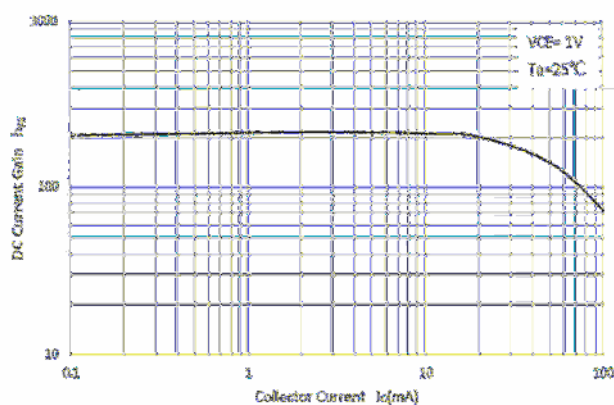
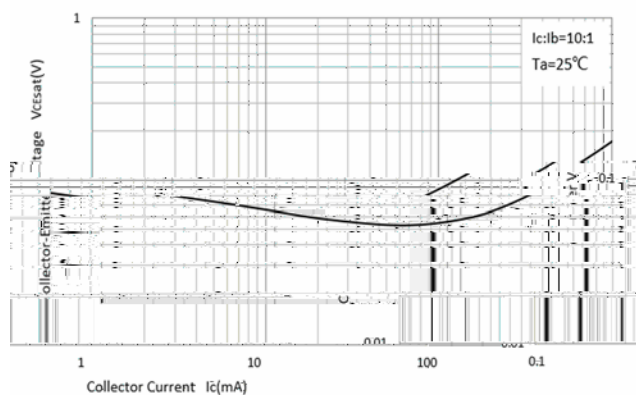
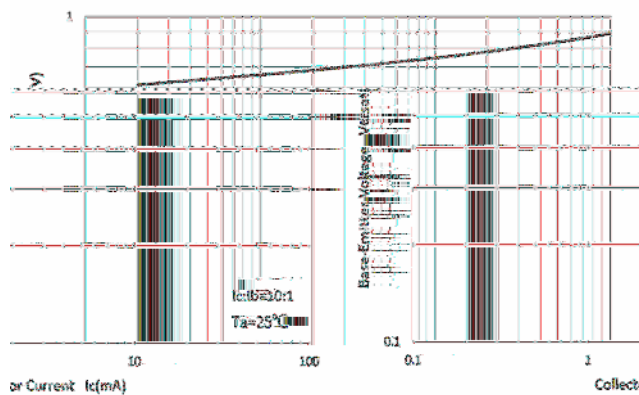
Item	Symbol	Unit	Conditions	Min	Typ	Max
------	--------	------	------------	-----	-----	-----

**■ Thermal Characteristics**

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}^{(1)}$	/W	833
Thermal resistance, junction-to-case	$R_{\theta J-C}^{(1)}$	/W	667

Note:

1 Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 25.4mm*25.4mm copper pad areas

■ Characteristics**TR1-NPN****Fig 1 Static Characteristics****Fig 2 DC Current Gain****Fig 3 Collector-Emitter Saturation Voltage****Fig 4 Base-Emitter Saturation Voltage**



MMDT3946V

RoHS
COMPLIANT

Fig 5 1ya

1ya



MMDT3946V

RoHS
COMPLIANT

Fig 3 Collector-Emitter Saturation Voltage

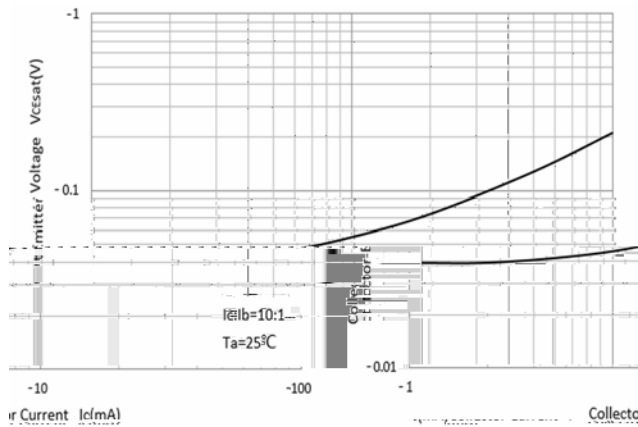


Fig 4 Base-Emitter Saturation Voltage

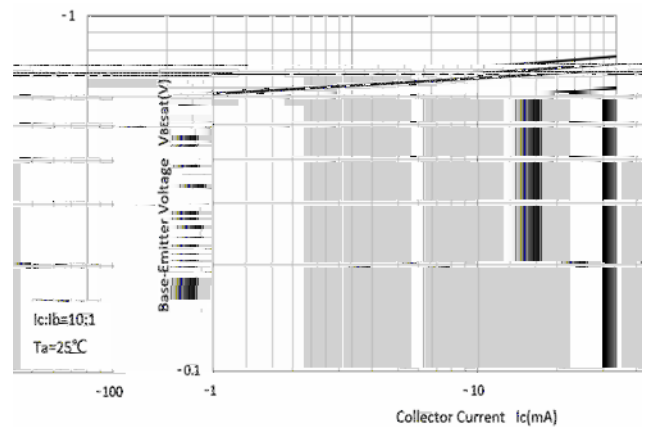


Fig 5 Base-Emitter Voltage



Fig 6 Cob/Cib- V_{CB}/V_{EB}

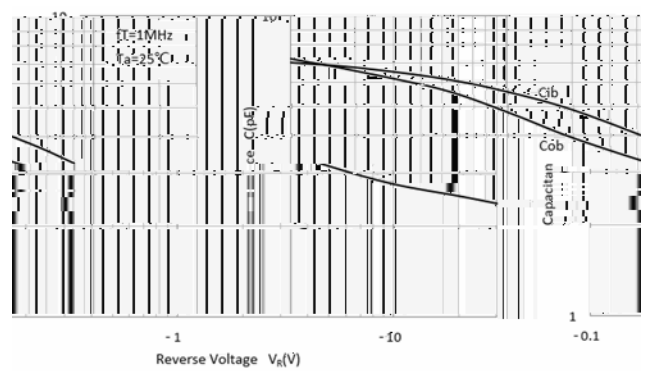
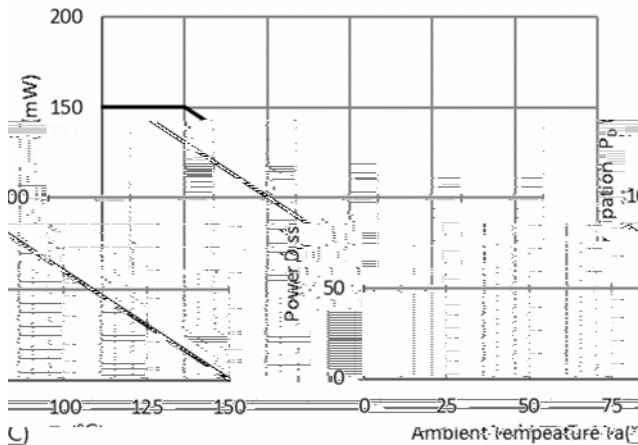


Fig 7 P_D - T_a Curve





MMDT3946V

RoHS
COMPLIANT

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
---------------	--------------	----------------	----------------------	-------------------------	----------------------------	---------------

