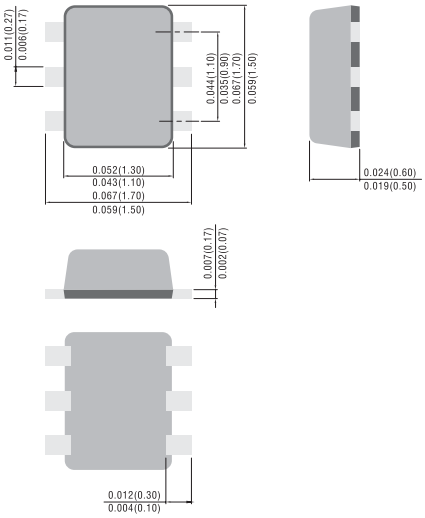
MMDT3906TB6

DUAL PNP GENERAL PURPOSE SWITCHING TRANSISTOR

VOLTAGE 40 Volts **POWER** 200 mWatts

SOT-563 Unit: inch (mm)



FEATURES

- PNP epitaxial silicon, planar design
- Collector-emitter voltage V_{CE} = -40V
- Collector current I_C = -200mA
- In compliance with EU RoHS 2002/95/EC directives

MECHANICAL DATA

- Case: SOT-563, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.003gram
- Marking: TS

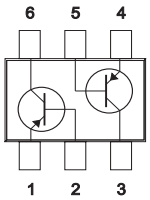


Fig.53

ABSOLUTE RATINGS

PARAMETER	Symbol	Value	Units
Collector - Emitter Voltage	V_{CEO}	-40	V
Collector - Base Voltage	V_{CBO}	-40	V
Emitter - Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-200	mA

THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Max Power Dissipation (Note 1)	P_{TOT}	200	mW
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	625	^{O}C/W
Junction Temperature	T_J	-55 to 150	^{O}C
Storage Temperature	T_{STG}	-55 to 150	^{O}C

Note 1: Transistor mounted on FR-4 board 70 x 60 x 1mm.

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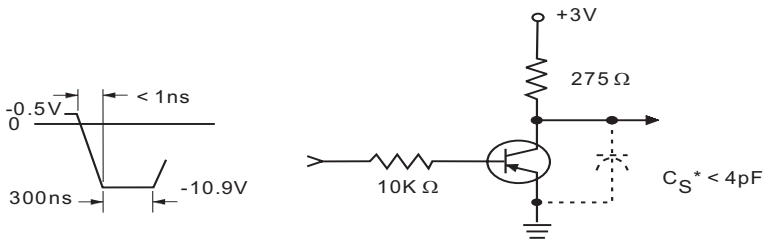
ELECTRICAL CHARACTERISTICS

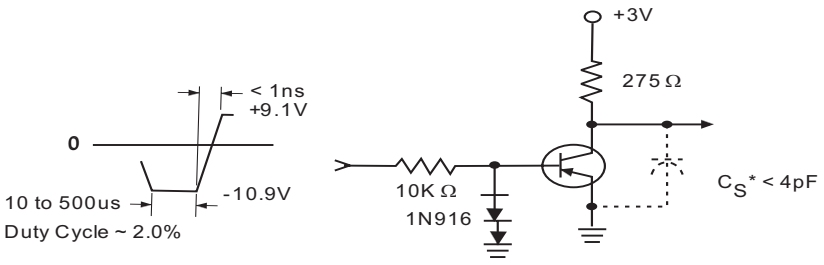
PARAMETER	Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-1.0mA, I_B=0	-40	-	-	V
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=-10uA, I_E=0	-40	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=-10uA, I_C=0	-5.0	-	-	V
Base Cutoff Current	I_{BI}	V_{CE}=-30V, V_{EB}=-3.0V	-	-	-50	nA
Collector Cutoff Current	I_{CEX}	V_{CE}=-30V, V_{EB}=-3.0V	-	-	-50	nA
DC Current Gain (Note 2)	h_{FE}	I_C=-0.1mA, V_{CE}=-1.0V I_C=-1.0mA, V_{CE}=-1.0V I_C=-10mA, V_{CE}=-1.0V I_C=-50mA, V_{CE}=-1.0V I_C=-100mA, V_{CE}=-1.0V	60 80 100 60 30	- - - - -	- - 300 - -	-
Collector - Emitter Saturation Voltage (Note 2)	$V_{CE(SAT)}$	I_C=-10mA, I_B=-1.0mA I_C=-50mA, I_B=-5.0mA	-	-	-0.25 -0.4	V
Base - Emitter Saturation Voltage (Note 2)	$V_{BE(SAT)}$	I_C=-10mA, I_B=-1.0mA I_C=-50mA, I_B=-5.0mA	-0.65 -	- -	-0.85 -0.95	V
Collector - Base Capacitance	C_{CBO}	V_{CB}=-5V, I_E=0, f=1MHz	-	-	4.0	pF
Emitter - Base Capacitance	C_{EBO}	V_{CB}=-0.5V, I_C=0, f=1MHz	-	-	10	pF
Delay Time	td	V_{CC}=-3V,V_{BE}=-0.5V, I_C=-10mA,I_B=-1.0mA	-	-	35	ns
Rise Time	tr	V_{CC}=-3V,V_{BE}=-0.5V, I_C=-10mA,I_B=-1.0mA	-	-	35	ns
Storage Time	ts	V_{CC}=-3V,I_C=-10mA I_B1=I_B2=-1.0mA	-	-	225	ns
Fall Time	tf	V_{CC}=-3V,I_C=-10mA I_B1=I_B2=1.0mA	-	-	75	ns

Note 2: Pulse Test: Pulse Width < 300 us, Duty Cycle < 2.0%.

SWITCHING TIME EQUIVALENT TEST CIRCUITS



Delay and Rise Time Equivalent Test Circuit



Storage and Fall Time Equivalent Test Circuit

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ELECTRICAL CHARACTERISTICS CURVE

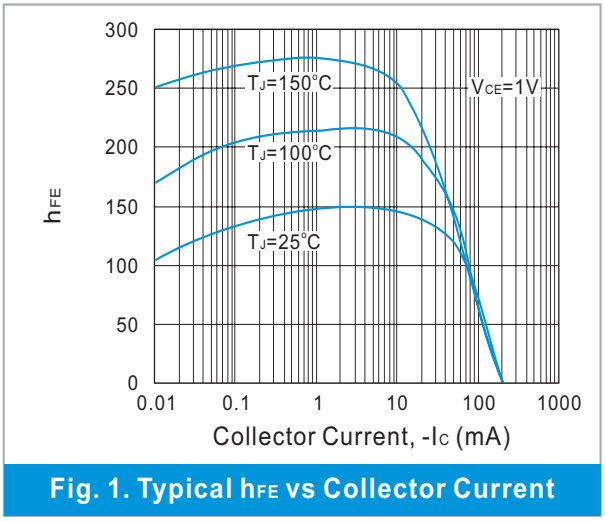

Fig. 1. Typical h_{FE} vs Collector Current

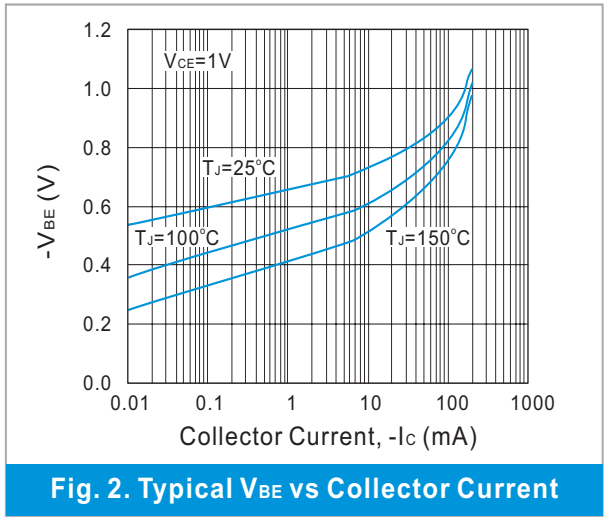

Fig. 2. Typical V_{BE} vs Collector Current

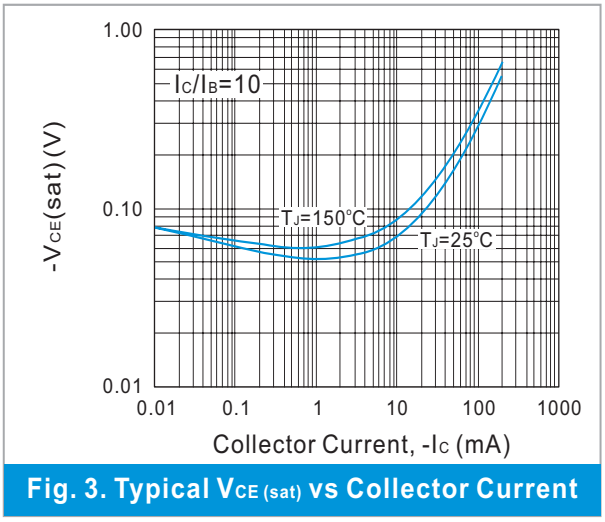

Fig. 3. Typical $V_{CE\,(sat)}$ vs Collector Current

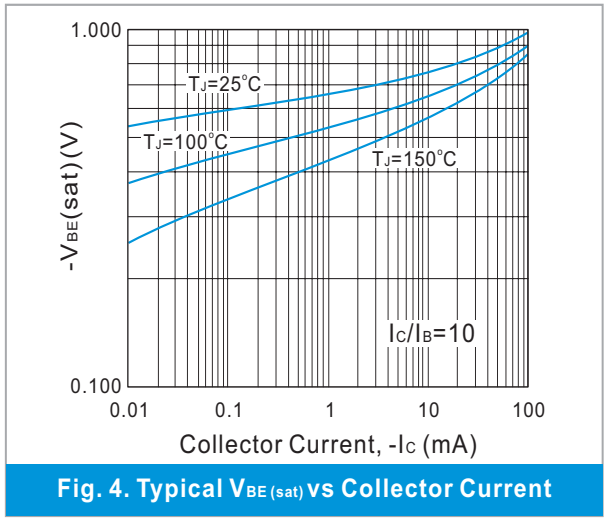

Fig. 4. Typical $V_{BE\,(sat)}$ vs Collector Current

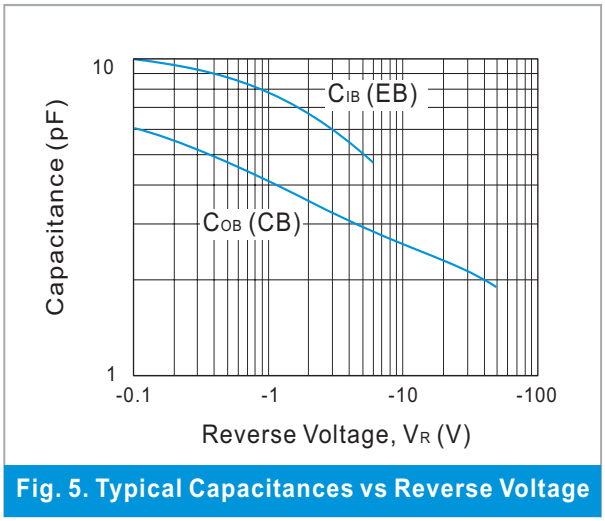

Fig. 5. Typical Capacitances vs Reverse Voltage

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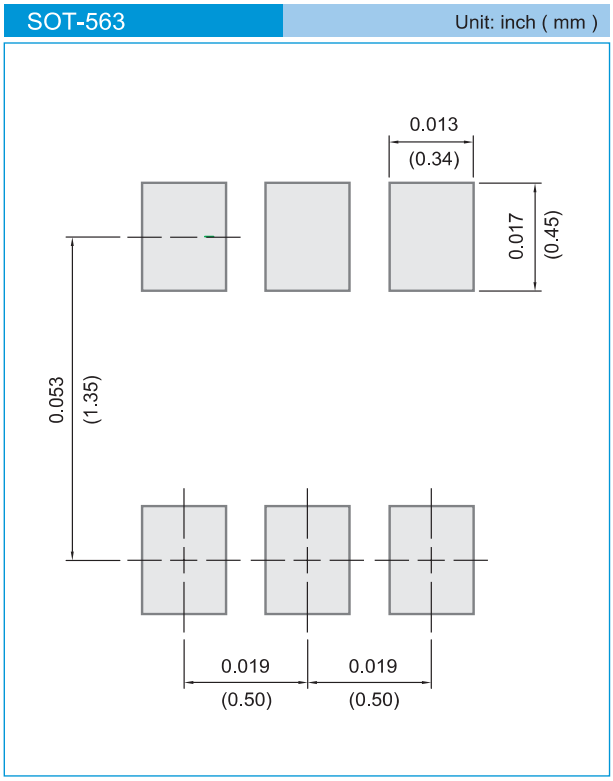
MOUNTING PAD LAYOUT

SOT-563 Unit: inch (mm)



ORDER INFORMATION

- Packing information

  T/R - 4K per 7" plastic Reel

  T/R - 10K per 13" plastic Reel

LEGAL STATEMENT