MMBT3906W_R1_00001 Datasheet

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DiGi Electronics Part Number	MMBT3906W_R1_00001-DG
Manufacturer	Panjit International Inc.
Manufacturer Product Number	MMBT3906W_R1_00001
Description	TRANS PNP 40V 0.2A SOT323
Detailed Description	Bipolar (BJT) Transistor PNP 40 V 200 mA 250MHz 150 mW Surface Mount SOT-323

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MMBT3906W_R1_00001	Panjit International Inc.
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
PNP	200 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
40 V	400mV @ 5mA, 50mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
50nA	100 @ 10mA, 1V
Power - Max:	Frequency - Transition:
150 mW	250MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
SC-70, SOT-323	SOT-323
Base Product Number:	
MMBT3906	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

PANJIT SEMI CONDUCTOR

MMBT3906W

PNP GENERAL PURPOSE SWITCHING TRANSISTOR

VOLTAGE 40 Volt **POWER** 150 mWatt

FEATURES

- PNP epitaxial silicon, planar design
- Collector-emitter voltage V_{CE} = -40V
- Collector current I_C = -200mA
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

- Case: SOT-323, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Apporx. Weight: 0.0001 ounce, 0.005 gram
- Marking: S2A

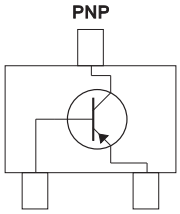
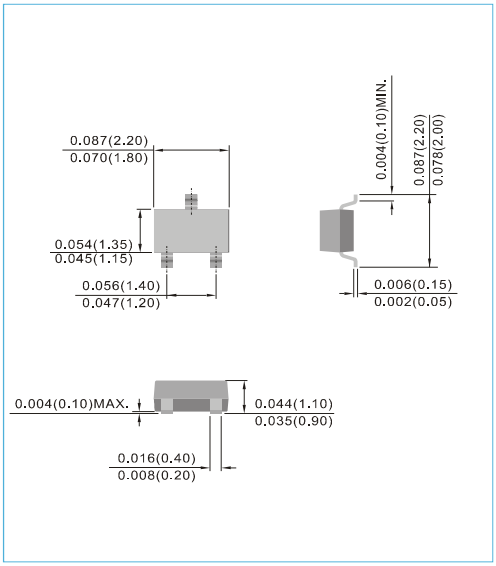


Fig.35

SOT-323 Unit : inch(mm)



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	V
Collector Current - Continuous	I_C	-200	mA

THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Max Power Dissipation (Note 1)	P_{TOT}	150	mW
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	830	°C/W
Junction Temperature	T_J	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

Note : 1. Transistor mounted on FR-5 board 1 x 0.75 x 0.062 in.

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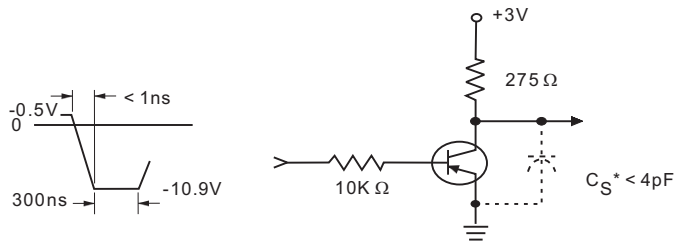
ELECTRICAL CHARACTERISTICS

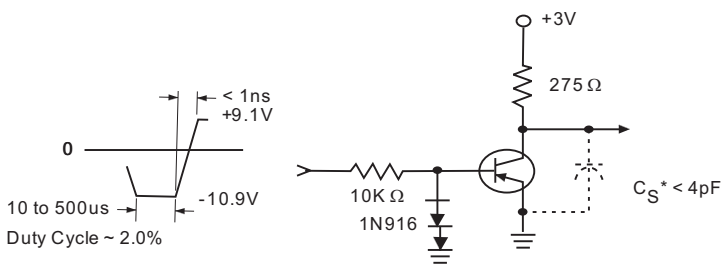
Parameter	Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	IC=-1mA, IB=0	-40	-	-	V
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	IC=-10uA, IE=0	-40	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	IE=-10uA, IC=0	-5	-	-	V
Base Cutoff Current	I_{BL}	VCE=-30V, VEB=-3V	-	-	-50	nA
Collector Cutoff Current	I_{CEX}	VCE=-30V, VEB=-3V	-	-	-50	nA
DC Current Gain (Note 2)	h_{FE}	IC=-0.1mA, VCE=-1V IC=-1mA, VCE=-1V IC=-10mA, VCE=-1V IC=-50mA, VCE=-1V IC=-100mA, VCE=-1V	60 80 100 60 30	- - - - -	- - 300 - -	-
Collector - Emitter Saturation Voltage (Note 2)	$V_{CE(SAT)}$	IC=-10mA, IB=-1mA IC=-50mA, IB=-5mA	-	-	-0.25 -0.4	V
Base - Emitter Saturation Voltage (Note 2)	$V_{BE(SAT)}$	IC=-10mA, IB=-1mA IC=-50mA, IB=-5mA	-0.65 -	- -	-0.85 -0.95	V
Collector - Base Capacitance	C_{CBO}	VCB=-5V, IE=0, f=1MHz	-	-	4.5	pF
Emitter - Base Capacitance	C_{EBO}	VEB=-0.5V, IC=0, f=1MHz	-	-	10	pF
Delay Time	td	V_{CC}=-3V,V_{BE}=-0.5V, I_C=-10mA,I_B=-1mA	-	-	35	ns
Rise Time	tr	V_{CC}=-3V,V_{BE}=-0.5V, I_C=-10mA,I_B=-1mA	-	-	35	ns
Storage Time	ts	VCC=-3V,IC=-10mA IB1=IB2=-1mA	-	-	225	ns
Fall Time	tf	VCC=-3V,IC=-10mA IB1=IB2=-1mA	-	-	75	ns
Current Gain-Bandwidth Product	f_T	I_C=-10mA,V_{CE}=-20V, f=100MHz	250	-	-	MHz

Note 2: Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.

SWITCHING TIME EQUIVALENT TEST CIRCUITS



Delay and Rise Time Equivalent Test Circuit



Storage and Fall Time Equivalent Test Circuit

MMBT3906W

ELECTRICAL CHARACTERISTICS CURVE

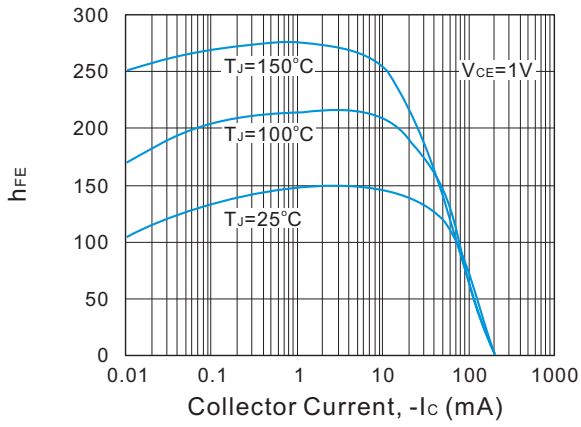


Fig. 1. Typical h_{FE} vs Collector Current

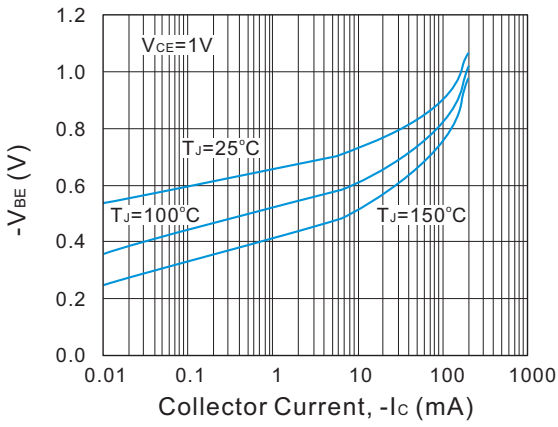


Fig. 2. Typical V_{BE} vs Collector Current

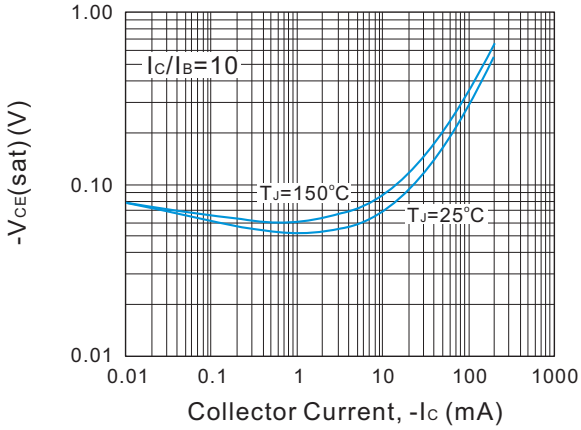


Fig. 3. Typical $V_{CE\ (sat)}$ vs Collector Current

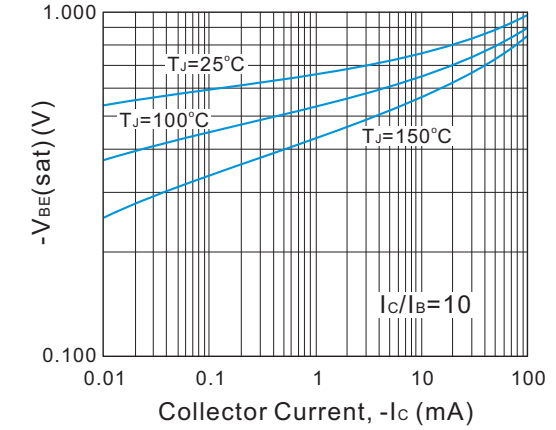


Fig. 4. Typical $V_{BE\ (sat)}$ vs Collector Current

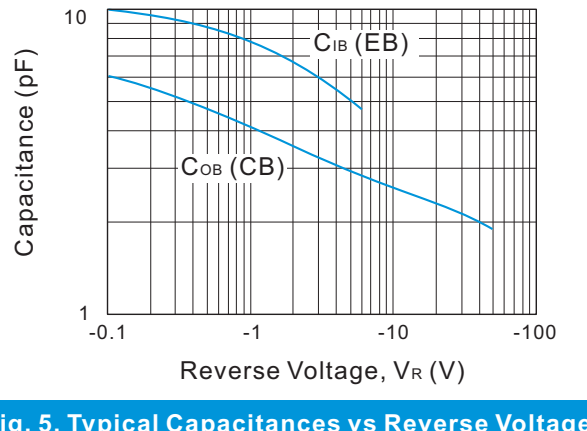
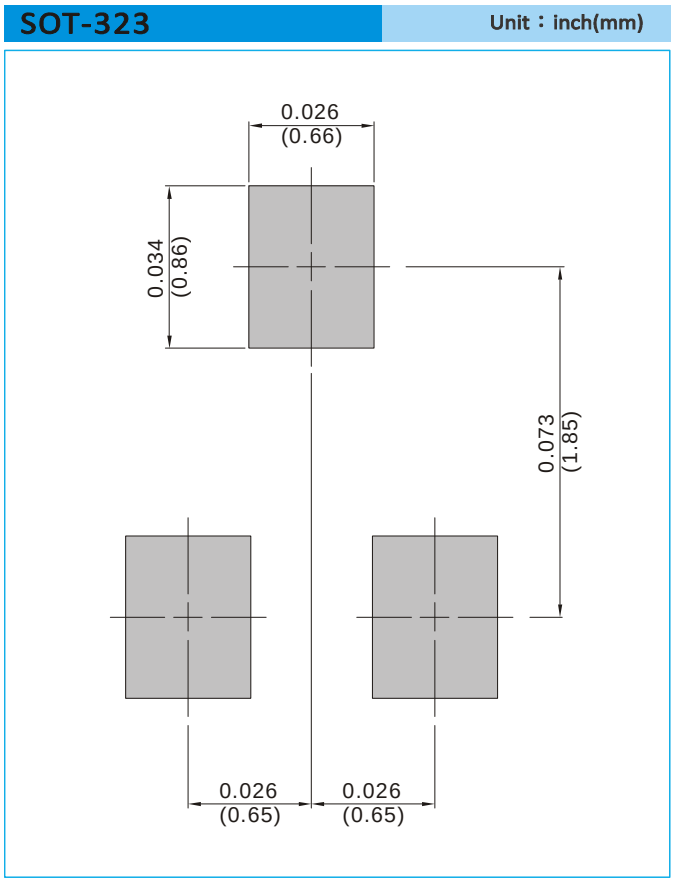


Fig. 5. Typical Capacitances vs Reverse Voltage

MMBT3906W

MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information

  T/R - 12K per 13" plastic Reel

  T/R - 3K per 7" plastic Reel

PANJIT SEMI CONDUCTOR

MMBT3906W

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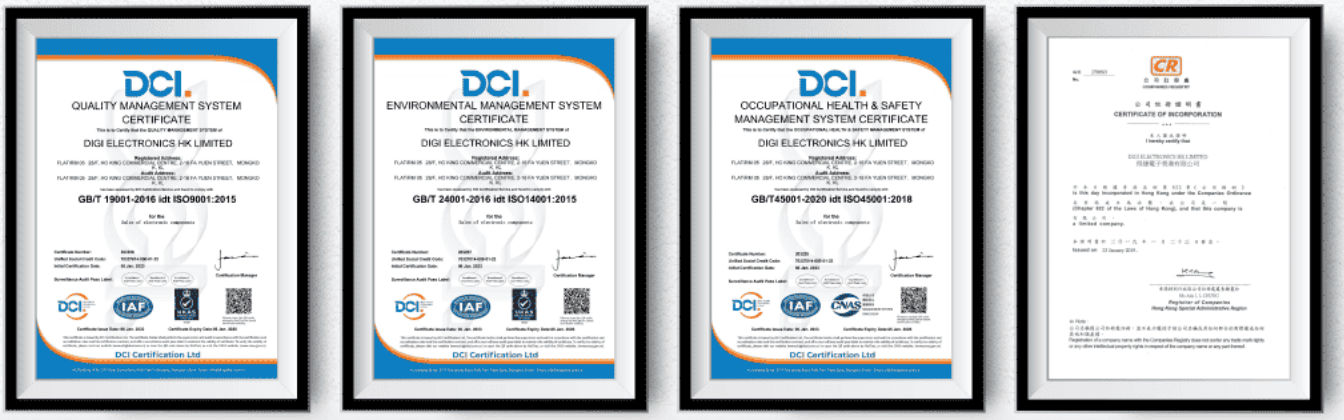

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