DMMT3904W-AU

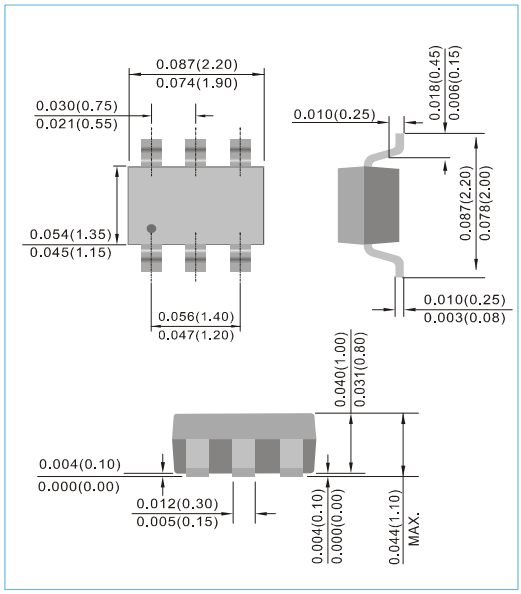
MATCHED NPN SMALL SIGNAL SURFACE MOUNT TRANSISTOR

VOLTAGE 40 Volt **POWER** 225 mWatt

FEATURES

- NPN epitaxial silicon, planar design
- Collector-emitter voltage V_{CE} = 40V
- Collector current I_C = 200mA
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

SOT-363 Unit : inch(mm)



MECHANICAL DATA

- Case: SOT-363, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0002 ounces, 0.006 grams
- Marking: S4A

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNITS
Collector - Base Voltage	V_{CBO}	60	V
Collector - Emitter Voltage	V_{CEO}	40	V
Emitter - Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous	I_C	200	mA
Power Dissipation (Note2)	P_{TOT}	225	mW
Thermal Resistance, Junction to Ambient (Note2)	$R_{\Theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J,T_{STG}	-55 to 150	°C

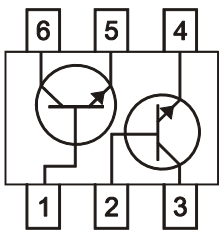


Fig.108(TOP VIEW)

Note:1.Built with adjacent die from a single wafer.

2.Device mounted on FR4 PCB: 70 x 60 x 1mm.

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ELECTRICAL CHARACTERISTICS

PARAMETER	Symbol	Test Condition	MIN.	MAX.	Units
Collector - Base Breakdown Voltage	$V_{(BR)}CBO$	I_C=10uA, I_E=0	60	-	V
Collector - Emitter Breakdown Voltage	$V_{(BR)}CEO$	I_C=1.0mA, I_B=0	40	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)}EBO$	I_E=10uA, I_C=0	6.0	-	V
Collector Cutoff Current	I_{CEX}	V_{CE}=30V, $V_{EB(off)}$=3.0V	-	50	nA
Base Cutoff Current	I_{BI}	V_{CE}=30V, $V_{EB(off)}$=3.0V	-	50	nA
DC Current Gain	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	40 70 100 60 30	- - 300 - -	-
Collector - Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA I_C=50mA, I_B=5.0mA	-	0.2 0.3	V
Base - Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA I_C=50mA, I_B=5.0mA	0.65 -	0.85 0.95	V
Base - Emitter VoltageMatching	ΔV_{BE}	V_{CE}=5V, I_C=2mA	-	1	mV
Output Capacitance	C_{OBO}	V_{CB}=5V, I_E=0, f=1MHz	-	4.0	pF
Input Capacitance	C_{iBO}	V_{CB}=0.5V, I_C=0, f=1MHz	-	8.0	pF
Input Impedance	h_{ie}	V_{CE}=10V, I_C=0mA, f=1.0KHz	1.0	10	kΩ
Voltage Feedback Ratio	h_{re}		0.5	8	$x10^{-4}$
SmallSignal Current Gain	h_{fe}		100	400	-
Output Admittance	h_{oe}		1.0	40	µs
Current Gain-Bandwidth Product	ft	V_{CE}=20V, I_C=10mA, f=100MHz	300	-	MHz
Noise Figure	NF	V_{CE}=5.0V, I_C=100µA,RS=1.0kΩ,f=1.0KHz	-	5.0	dB
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,$V_{BE(off)}$=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	-	200	ns
Fall Time	tf	V_{CC}=3V,I_C=10mA I_{B1}=I_{B2}=1.0mA	-	50	ns

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

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ELECTRICAL CHARACTERISTICS CURVE

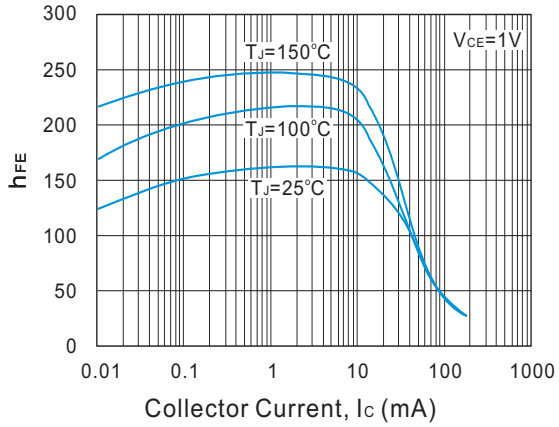

Fig. 1. Typical h_{FE} vs. Collector Current

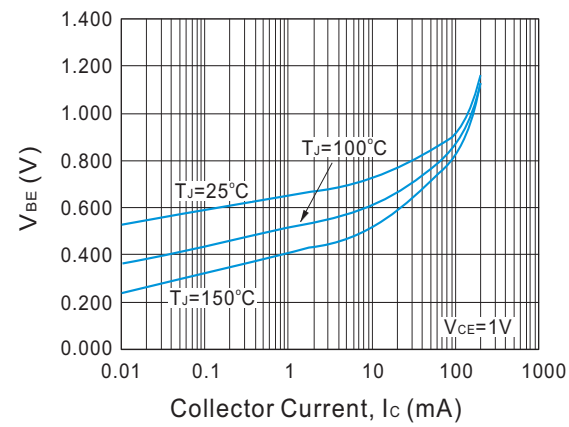

Fig. 2. Typical VBE vs. Collector Current

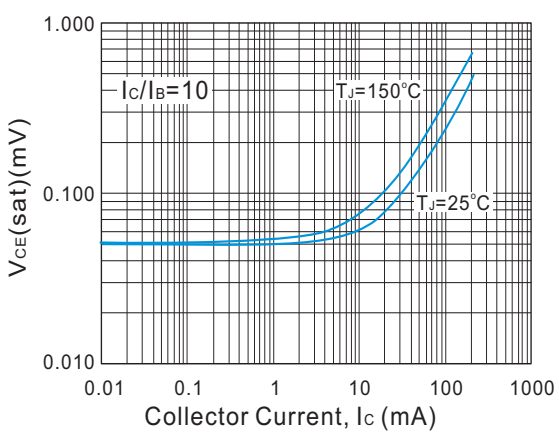

Fig. 3. Typical $V_{CE\,(sat)}$ vs. Collector Current

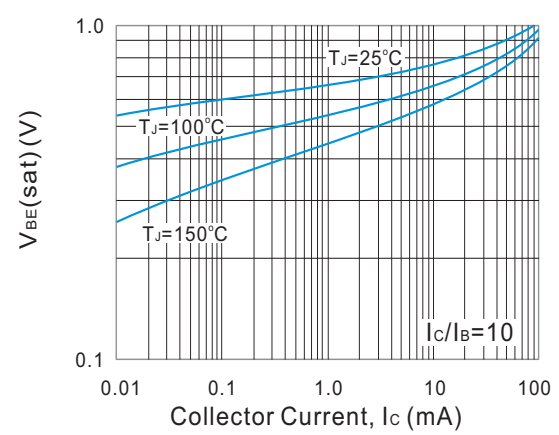

Fig. 4. Typical $V_{BE(sat)}$ vs Collector Current

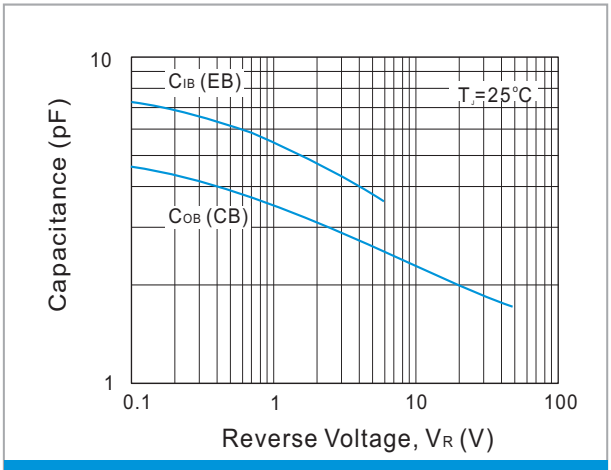

Fig. 5. Typical Capacitances vs. Reverse Voltage

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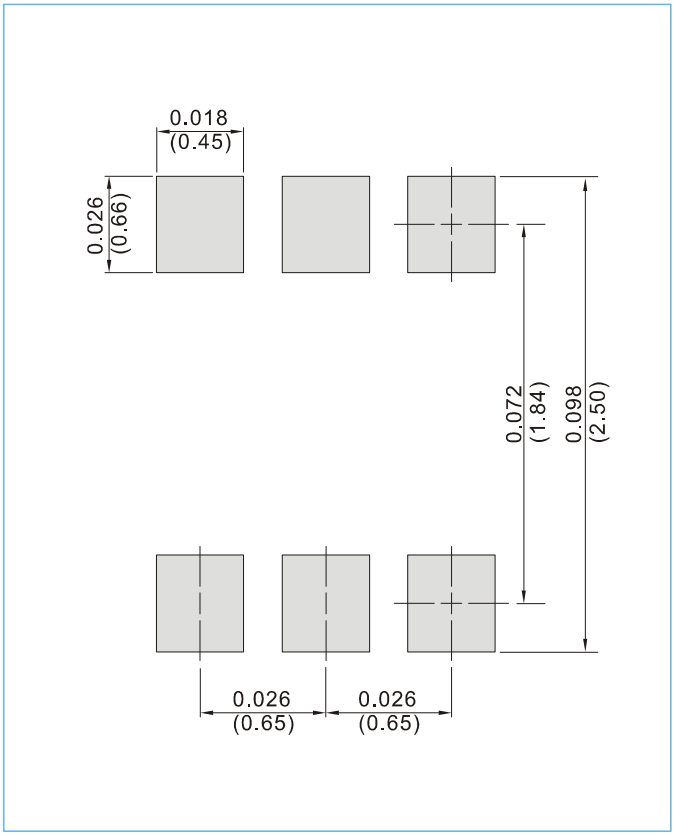
MOUNTING PAD LAYOUT

SOT-363 Unit : inch(mm)



ORDER INFORMATION

- Packing information

  T/R - 10K per 13" plastic Reel

  T/R - 3K per 7" plastic Reel

DMMT3904W-AU

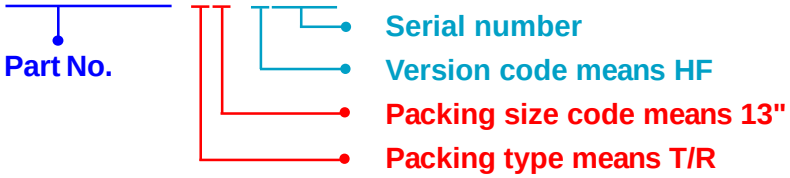
Part No_packing code_Version

DMMT3904W-AU_R1_000A1

DMMT3904W-AU_R2_000A1

For example :

RB500V-40_R2_00001



Packing Code XX				Version Code XXXXX		
Packing type	1st Code	Packing size code	2nd Code	HF or RoHS	1st Code	2nd~5th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			

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