



MMDT4401

DUAL NPN GENERAL PURPOSE SWITCHING TRANSISTOR

VOLTAGE 40 Volts **POWER** 225 mWatts

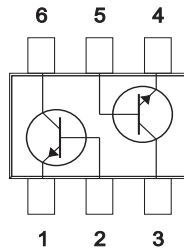
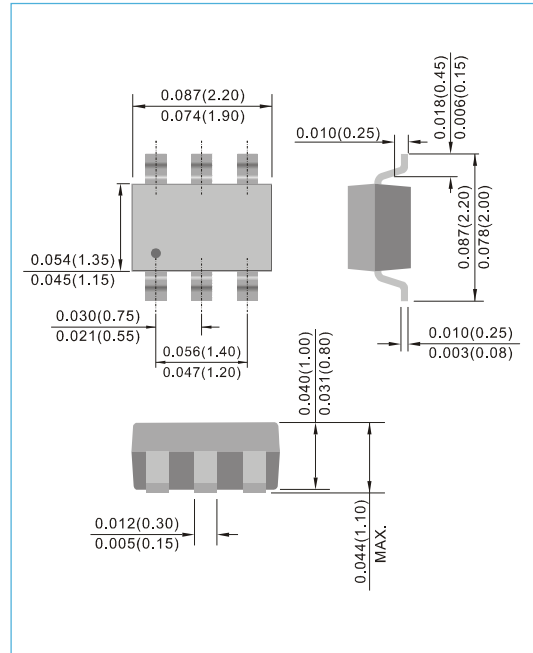
SOT-363 Unit : inch(mm)

FEATURES

- NPN epitaxial silicon, planar design
- Collector-emitter voltage $V_{CE} = 40V$
- Collector current $I_C = 600mA$
- In compliance with EU RoHS 2002/95/EC directives

MECHANICAL DATA

- Case: SOT-363, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0002 ounces, 0.006 grams
- Marking: M4A



ABSOLUTE RATINGS ($T_A=25^\circ C$ unless otherwise noted)

PARAMETER	Symbol	Value	Units
Collector - Emitter Voltage	V_{CEO}	40	V
Collector - Base Voltage	V_{CBO}	60	V
Emitter - Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous	I_C	600	mA

THERMAL CHARACTERISTICS ($T_A=25^\circ C$ unless otherwise noted)

PARAMETER	Symbol	Value	Units
Max Power Dissipation (Note1)	P_{TOT}	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	$^\circ C/W$
Junction Temperature	T_J	-55 to 150	$^\circ C$
Storage Temperature	T_{STG}	-55 to 150	$^\circ C$

Note 1: Transistor mounted on FR-4 board 1.0X0.85X0.062 in.



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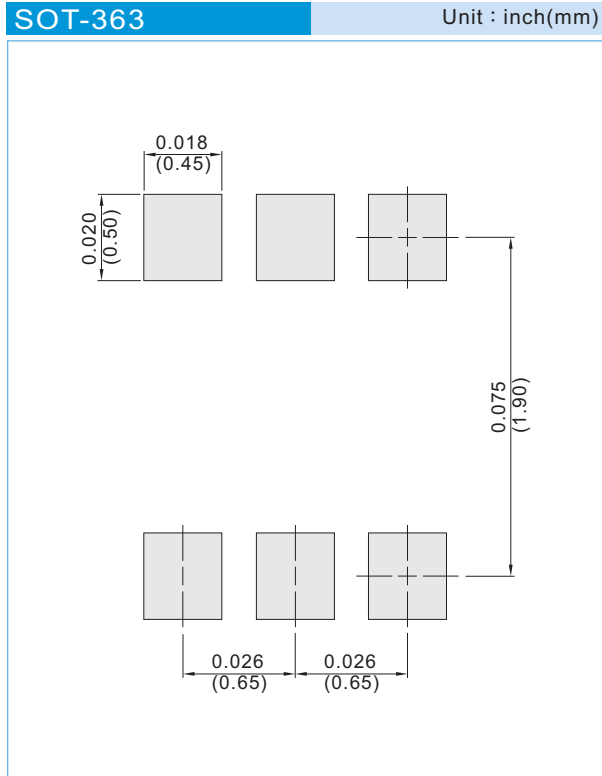
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

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 =100μA, I _E =0	60	-	-	V
Emitter - Base Breakdown Voltage	V _{(BR)EBO}	I _E =100μA, I _C =0	6.0	-	-	V
Base Cutoff Current	I _{BL}	V _{CE} =35V, V _{EB} =0.4V	-	-	100	nA
Collector Cutoff Current	I _{CEX}	V _{CE} =35V, V _{EB} =0.4V	-	-	100	nA
DC Current Gain (Note 2)	h _{FE}	I _C =0.1mA, V _{CE} =1.0V	20	-	-	-
		I _C =1.0mA, V _{CE} =1.0V	40	-	-	
		I _C =10mA, V _{CE} =1.0V	80	-	-	
		I _C =150mA, V _{CE} =1.0V	100	-	300	
		I _C =500mA, V _{CE} =2.0V	40	-	-	
Collector - Emitter Saturation Voltage (Note 2)	V _{CE(SAT)}	I _C =150mA, I _B =15mA I _C =500mA, I _B =50mA	-	-	0.40 0.75	V
Base - Emitter Saturation Voltage (Note 2)	V _{BE(SAT)}	I _C =150mA, I _B =15mA I _C =500mA, I _B =50mA	0.75 -	- -	0.95 1.20	V
Collector - Base Capacitance	C _{CBO}	V _{CB} =5V, I _E =0, f=1MHz	-	-	6.5	pF
Emitter - Base Capacitance	C _{EBO}	V _{CB} =0.5V, I _C =0, f=1MHz	-	-	30	pF
Current Gain - Bandwidth Product	F _T	V _{CE} =10V, I _C =20mA, f=100MHz	250	-	-	MHz
Delay Time	t _d	V _{CC} =30V, V _{BE} =2.0V, I _C =150mA, I _{B1} =15mA	-	-	15	ns
Rise Time	t _r	V _{CC} =30V, V _{BE} =2.0V, I _C =150mA, I _{B1} =15mA	-	-	20	ns
Storage Time	t _s	V _{CC} =30V, I _C =150mA I _{B1} =I _{B2} =15mA	-	-	225	ns
Fall Time	t _f	V _{CC} =30V, I _C =150mA I _{B1} =I _{B2} =15mA	-	-	30	ns



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
 - T/R - 10K per 13" plastic Reel
 - T/R - 3K per 7" plastic Reel

LEGAL STATEMENT

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