

Dual PNP Small Signal Surface Mount Transistor

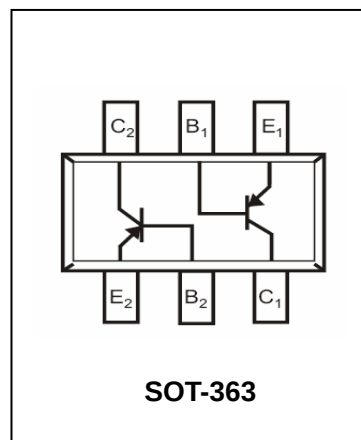
MMDT4403

FEATURES

- Epitaxial planar die construction.
- Ultra-small surface mount package.
- Also available in lead free version.
- Power dissipation: $P_{tot}=0.2W$.



Lead-free



APPLICATIONS

- General switching and amplification

ORDERING INFORMATION

Type No.	Marking	Package Code
MMDT4403	K2T	SOT-363

MAXIMUM RATING @ $T_a=25^{\circ}C$ unless otherwise specified

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	collector-base voltage	-40	V
V_{CEO}	collector-emitter voltage	-40	V
V_{EBO}	emitter-base voltage	-5	V
I_C	collector current -continuous	-0.6	A
P_{tot}	total power dissipation	-0.2	W
T_{stg}	storage temperature	150	$^{\circ}C$
T_j	junction temperature	-55 to +150	$^{\circ}C$



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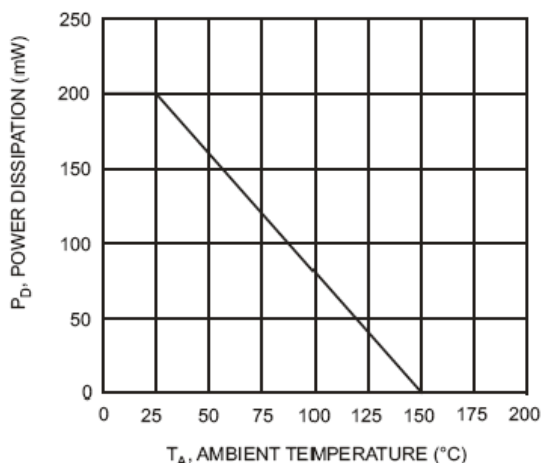
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C = -100\mu A, I_E = 0$	-40		V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C = -1mA, I_B = 0$	-40		V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = -100\mu A, I_C = 0$	-5		V
I_{BL}	Base cut-off current	$I_{EB(OFF)} = -0.4V, V_{CB} = -35V$	-	-0.1	μA
I_{CEX}	collector cut-off current	$I_{EB(OFF)} = -0.4V, V_{CB} = -35V$	-	-0.1	μA
h_{FE}	DC current gain	$V_{CE} = -1V, I_C = -0.1mA$	30	-	
		$V_{CE} = -1V, I_C = -1mA$	60	-	
		$V_{CE} = -1V, I_C = -10mA$	100	-	
		$V_{CE} = -2V, I_C = -150mA$	100	300	
		$V_{CE} = -2V, I_C = -500mA$	20	-	
$V_{CE(sat)}$	collector-emitter saturation voltage	$I_C = -150mA, I_B = -15mA$	-	-0.4	V
		$I_C = -500mA, I_B = -50mA$	-	-0.75	V
$V_{BE(sat)}$	base-emitter saturation voltage	$I_C = -150mA, I_B = -15mA$	-0.75	-0.95	V
		$I_C = -500mA, I_B = -50mA$	-	-1.3	V
C_{ob}	Output capacitance	$I_E = 0, V_{CB} = -10V; f = 1MHz$	-	8.5	pF
f_T	transition frequency	$I_C = -20mA, V_{CE} = -10V, f = 100MHz$	200	-	MHz
t_d	delay time	$V_{CC} = -30V, V_{BE} = -2V, I_C = -150mA$ $I_{B1} = -15mA$	-	15	ns
t_r	rise time		-	20	ns
t_s	storage time	$V_{CC} = -30V, I_C = -150mA$ $I_{B1} = I_{B2} = -15mA$	-	225	ns
t_f	fall time		-	30	ns

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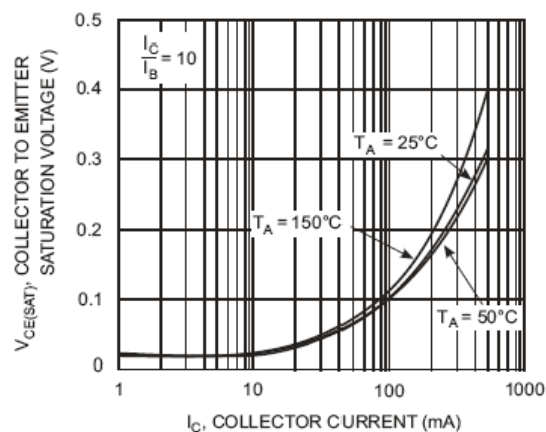
MMDT4403

TYPICAL CHARACTERISTICS @ $T_A=25^\circ\text{C}$ unless otherwise specified



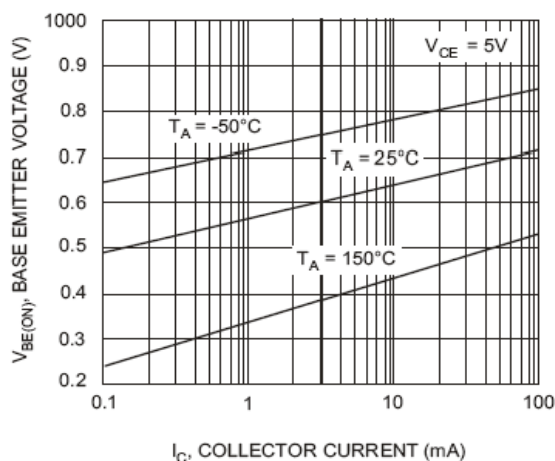
T_A , AMBIENT TEMPERATURE ($^\circ\text{C}$)

Fig. 1, Max Power Dissipation vs Ambient Temperature



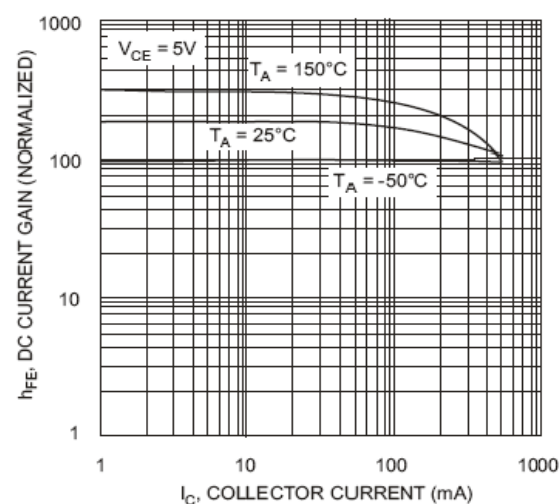
I_C , COLLECTOR CURRENT (mA)

Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current



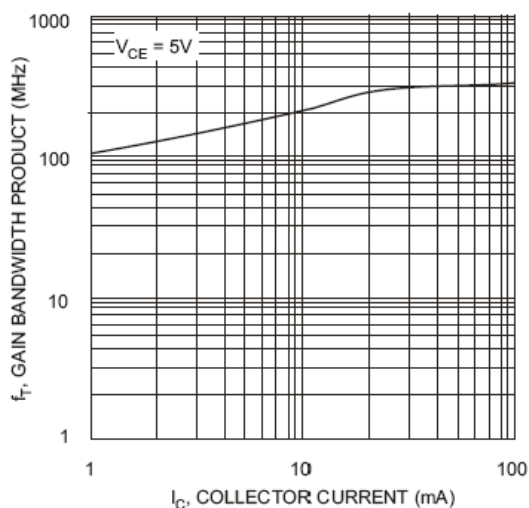
I_C , COLLECTOR CURRENT (mA)

Fig. 3, Base-Emitter Voltage vs. Collector Current



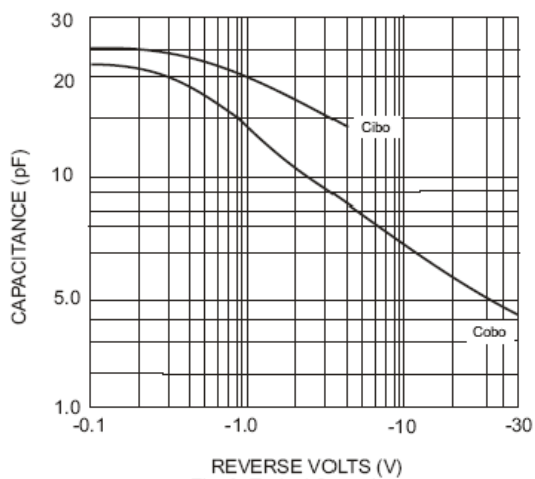
I_C , COLLECTOR CURRENT (mA)

Fig. 4, DC Current Gain vs. Collector Current



I_C , COLLECTOR CURRENT (mA)

Fig. 5, Gain Bandwidth Product vs. Collector Current



REVERSE VOLTS (V)

Fig. 6, Typical Capacitance



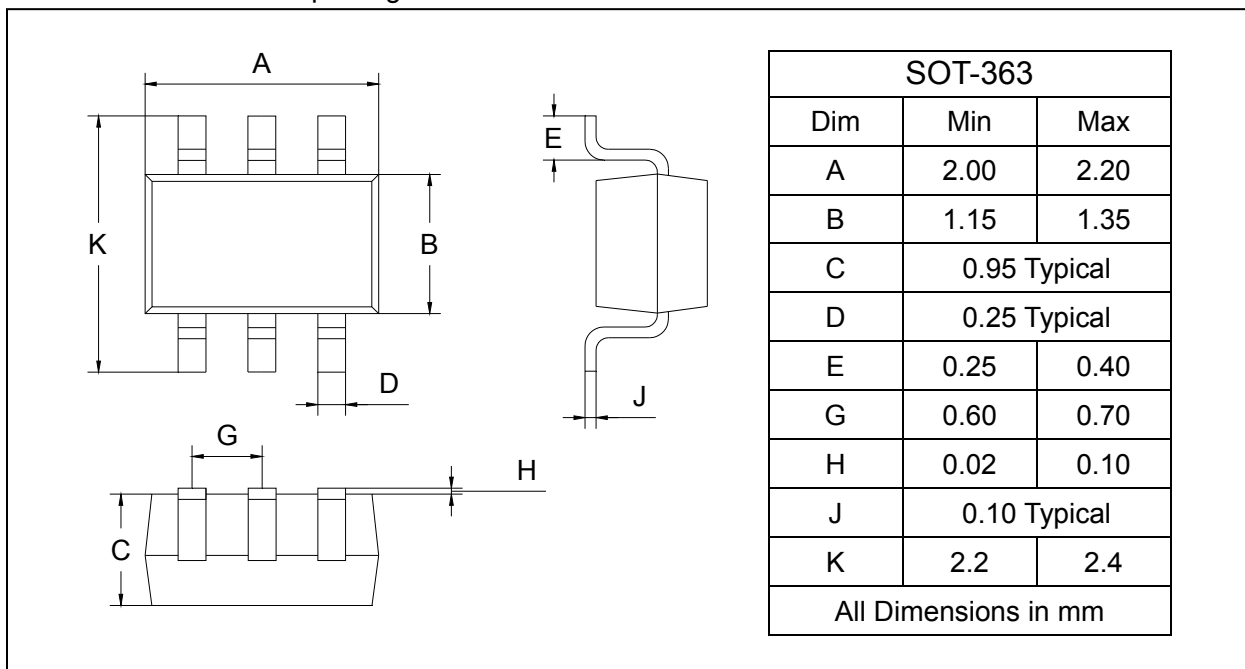
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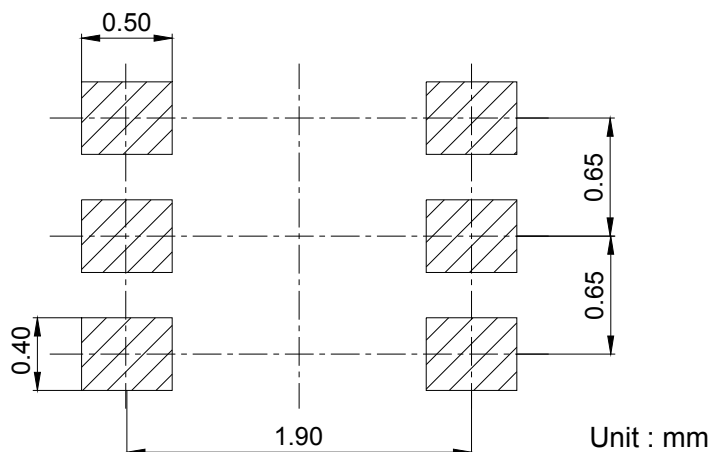
PACKAGE OUTLINE

Plastic surface mounted package

SOT-363



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
MMDT4403	SOT-363	3000/Tape&Reel