

## SOT-363 Plastic-Encapsulate Transistors

### MMDT4403 Multi-Chip TRANSISTOR (PNP)

#### FEATURES

Power dissipation

$$P_{CM}: 0.2 \text{ W (Tamb=25}^\circ\text{C)}$$

Collector current

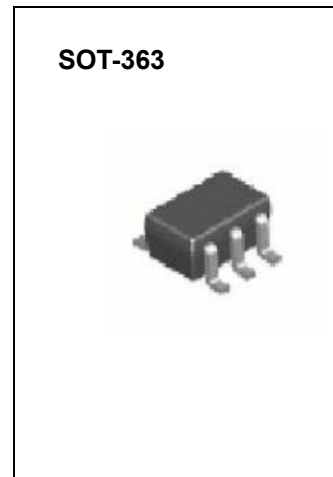
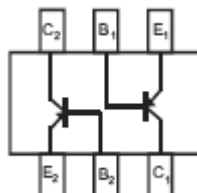
$$I_{CM}: -0.6 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: -40 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg}: -55^\circ\text{C to } +150^\circ\text{C}$$



SOT-363

#### MRKING:K2T

#### ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, I_B = 0$	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100\mu\text{A}, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -50\text{V}, I_E = 0$			-0.1	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE} = -35\text{V}, I_B = 0$			-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5\text{V}, I_C = 0$			-0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE} = -1\text{V}, I_C = -0.1\text{mA}$	30			
	$h_{FE(2)}$	$V_{CE} = -1\text{V}, I_C = -1\text{mA}$	60			
	$h_{FE(3)}$	$V_{CE} = -1\text{V}, I_C = -10\text{mA}$	100			
	$h_{FE(4)}$	$V_{CE} = -2\text{V}, I_C = -150\text{mA}$	100		300	
	$h_{FE(5)}$	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	20			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C = -150\text{mA}, I_B = -15\text{mA}$			-0.4	V
	$V_{CE(sat)2}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$			-0.75	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	$I_C = -150\text{mA}, I_B = -15\text{mA}$	-0.75		-0.95	V
	$V_{BE(sat)2}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$			-1.3	V
Transition frequency	$f_T$	$V_{CE} = -10\text{V}, I_C = -20\text{mA}$ $f = 100\text{MHz}$	200			MHz
Output Capacitance	$C_{ob}$	$V_{CB} = -10\text{V}, I_E = 0$ $f = 1\text{MHz}$			8.5	pF
Delay time	$t_d$	$V_{CC} = -30\text{V}, V_{BE} = -2\text{V}$			15	nS
Rise time	$t_r$	$I_C = -150\text{mA}, I_{B1} = -15\text{mA}$			20	nS
Storage time	$t_s$	$V_{CC} = -30\text{V}, I_C = -150\text{mA}$			225	nS
Fall time	$t_f$	$I_{B1} = I_{B2} = -15\text{mA}$			30	nS

# Typical Characteristics

# MMDT4403

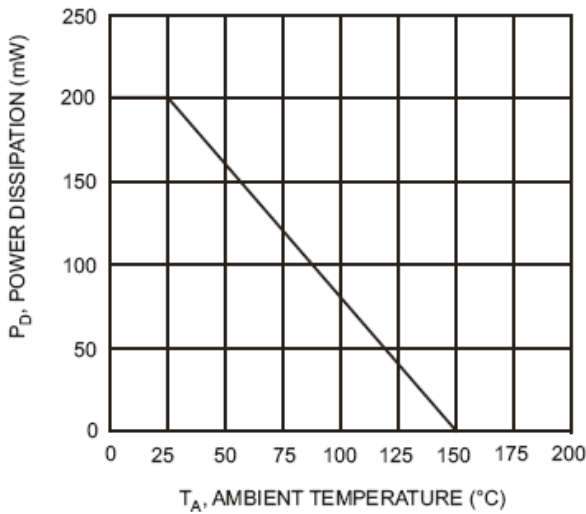


Fig. 1, Max Power Dissipation vs Ambient Temperature

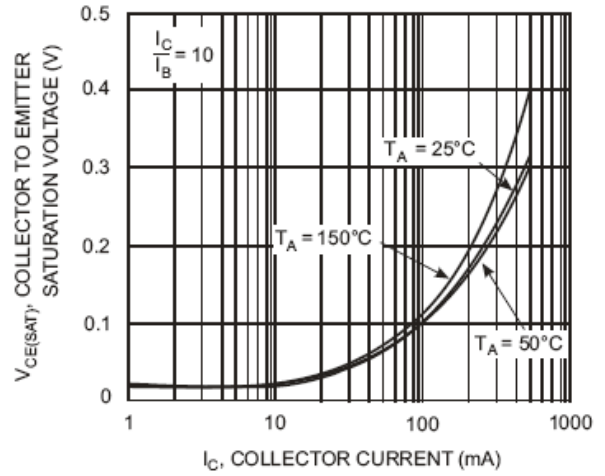


Fig. 2 Collector Emitter Saturation Voltage vs. Collector Current

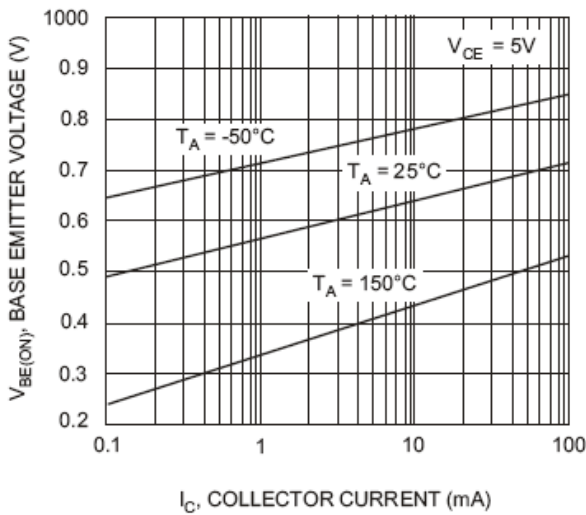


Fig. 3 Base-Emitter Voltage vs. Collector Current

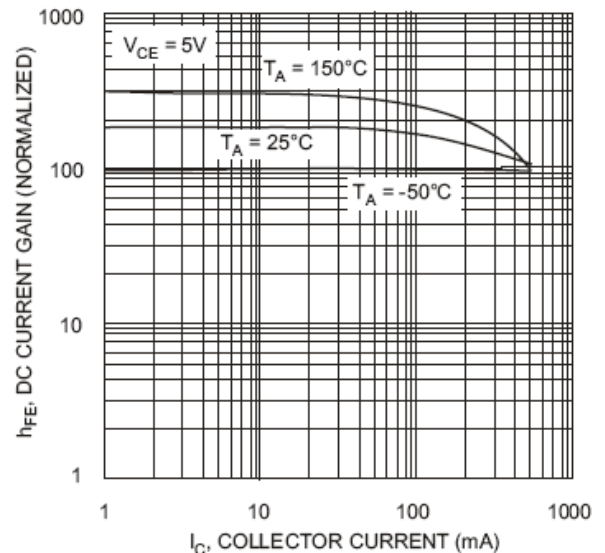


Fig. 4 DC Current Gain vs. Collector Current

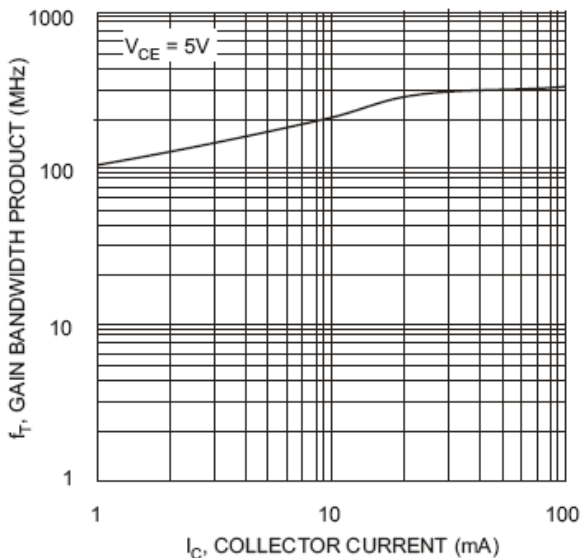


Fig. 5 Gain Bandwidth Product vs. Collector Current

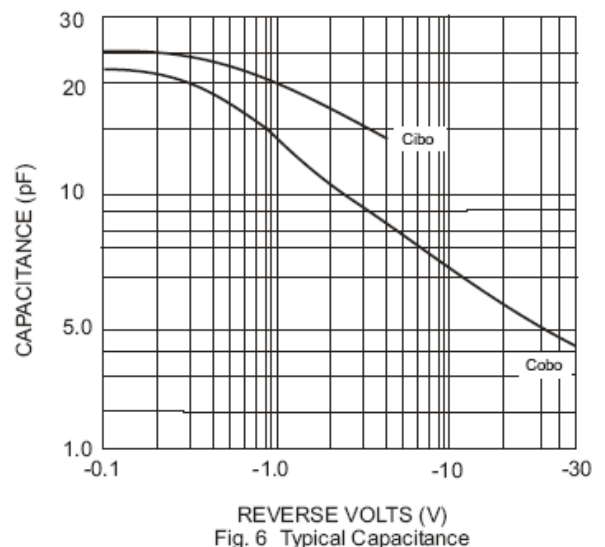


Fig. 6 Typical Capacitance