Elektronische Bauelemente

MMDT3904-C

0.2A, 60V
Plastic-Encapsulate
Multi-Chip (NPN+NPN) Transistor

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead free

FEATURES

- Power Dissipation P_C: 200mW (T_A=25°C)
- Collector Current I_C: 200mA
- Collector–Base Voltage $V_{(BR)CBO}$: 60V

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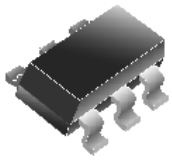
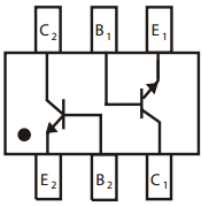


MARKING

K6N
MA

PACKAGING DIMENSION

Package	MPQ	Leader Size
SOT-363	3K	7 inch



ORDER INFORMATION

Part Number	Type
MMDT3904-C	Lead (Pb)-free and Halogen-free

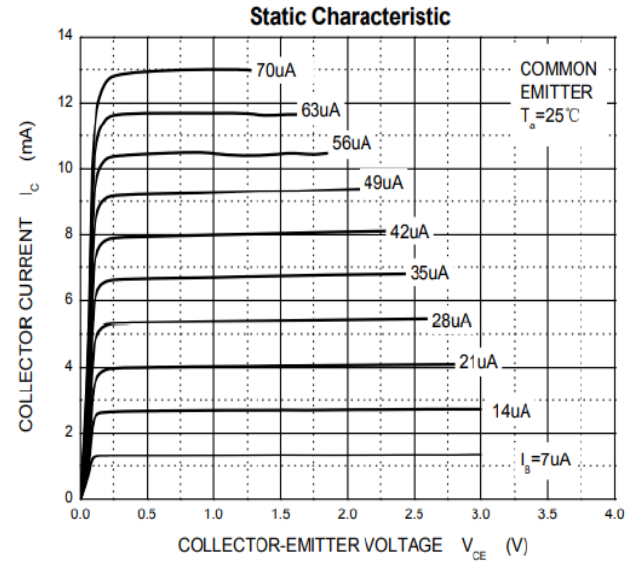
ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

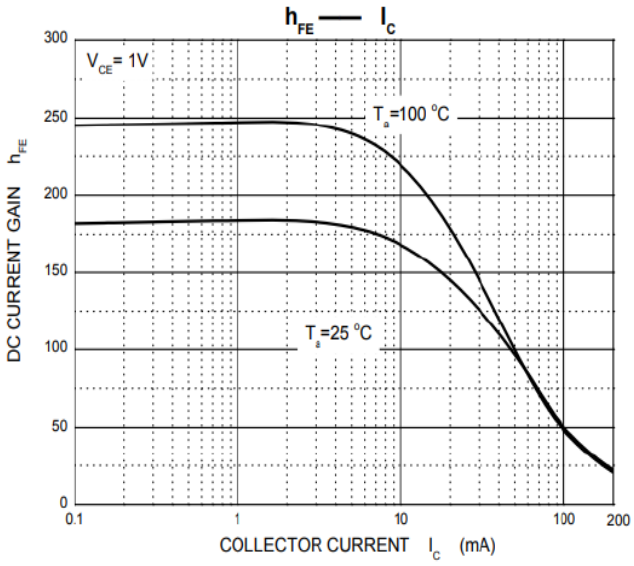
Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current-Continuous	I_C	200	mA
Power Dissipation	P_C	200	mW
Junction, Storage Temperature Range	T_J, T_{STG}	150, -55~150	°C

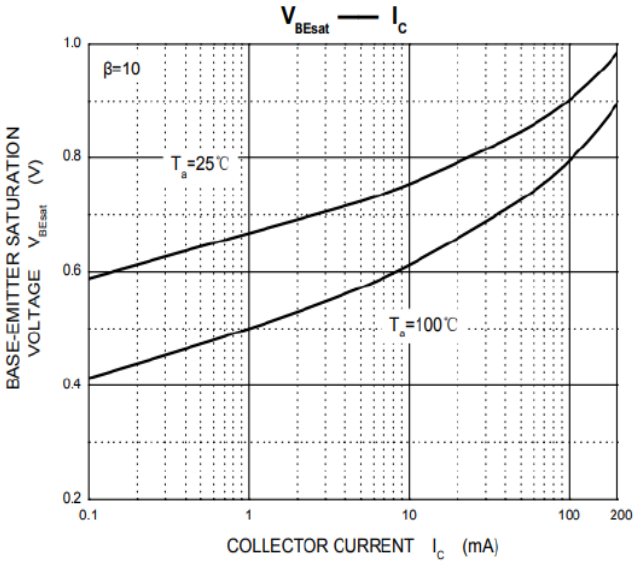
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

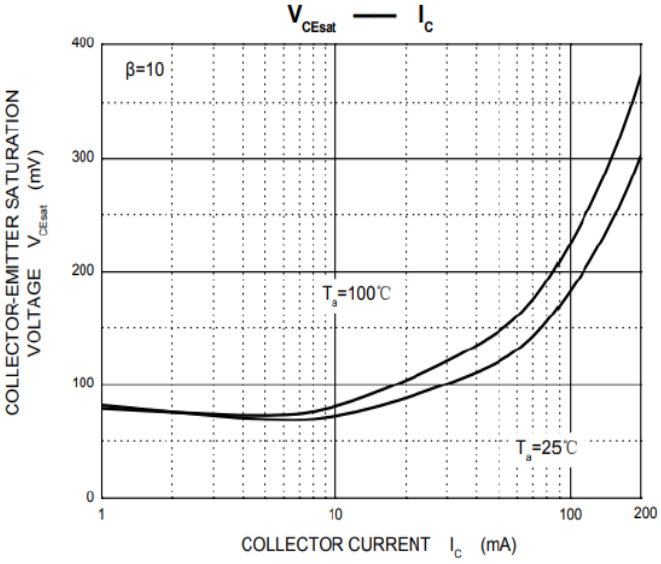
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	60	-	-	V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40	-	-		I_C=1mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	-	-		I_E=10μA, I_C=0
Collector Cut-off Current	I_{CBO}	-	-	50	nA	V_{CB}=30V, I_E=0
Emitter Cut-off Current	I_{EBO}	-	-	50		V_{EB}=5V, I_C=0
Collector Cut-off Current	I_{CEX}	-	-	50		V_{CE}=30V, $V_{BE(off)}$=3V
DC Current Gain	h_{FE}	40	-	-		V_{CE}=1V, I_C=0.1mA
		70	-	-		V_{CE}=1V, I_C=1mA
		100	-	300		V_{CE}=1V, I_C=10mA
		60	-	-		V_{CE}=1V, I_C=50mA
		30	-	-		V_{CE}=1V, I_C=100mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.2	V	I_C=10mA, I_B=1mA
		-	-	0.3		I_C=50mA, I_B=5mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	0.65	-	0.85	V	I_C=10mA, I_B=1mA
		-	-	0.95		I_C=50mA, I_B=5mA
Transition Frequency	f_T	-	300	-	MHz	V_{CE}=20V, I_C=10mA, f=100MHz
Output Capacitance	C_{ob}	-	4	-	pF	V_{CB}=5V, I_E=0, f=1MHz
Noise Figure	NF	-	5	-	dB	V_{CE}=5V, I_C=0.1mA, f=1kHz, R_S=1kΩ
Delay time	T_d	-	35	-	nS	V_{CC}=3V, $V_{BE(off)}$= -0.5V, I_C=10mA, I_{B1}= -I_{B2}=1mA
Rise time	T_r	-	35	-		
Storage time	T_s	-	200	-		V_{CC}=3V, I_C=10mA, I_{B1}= -I_{B2}=1mA
Fall time	T_f	-	50	-		

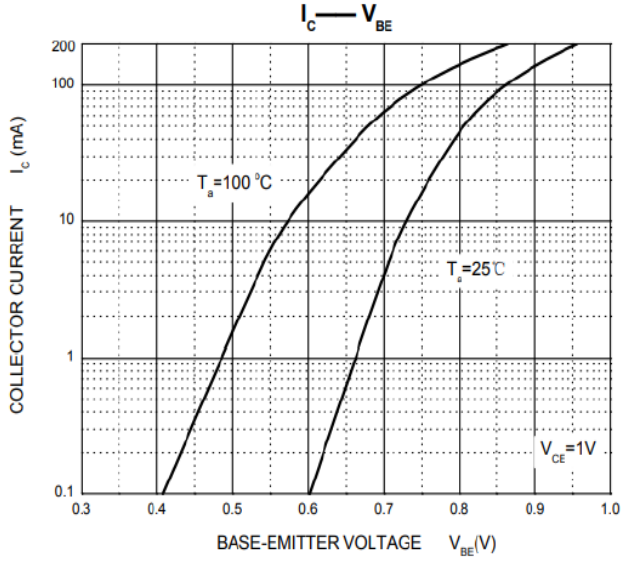
CHARACTERISTIC CURVES

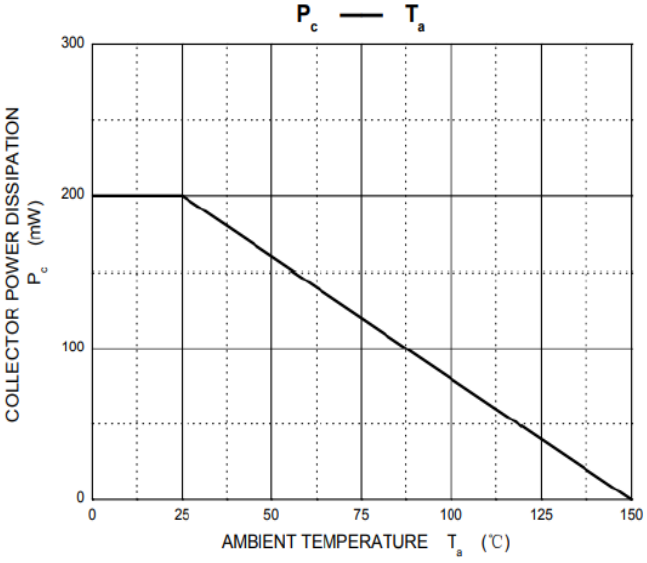












PACKAGE OUTLINE DIMENSIONS

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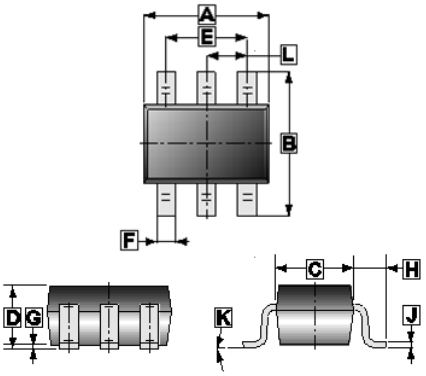

REF.	Millimeter	
	Min.	Max.
A	1.80	2.20
B	1.80	2.45
C	1.15	1.35
D	0.70	1.10
E	1.30 REF.	
F	0.10	0.35
G	0.10 REF.	
H	0.525 REF.	
J	0.05	0.25
K	8°	
L	0.65 TYP.	

MOUNTING PAD LAYOUT

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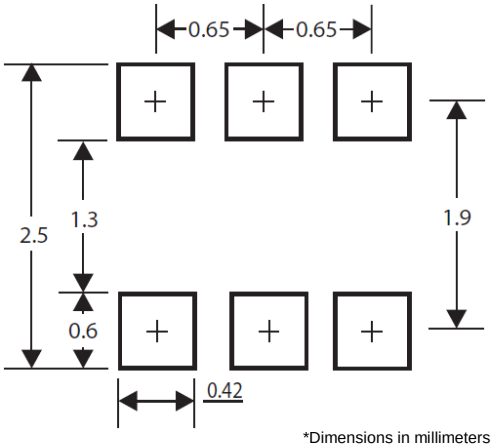

*Dimensions in millimeters