Elektronische Bauelemente

MMBT4401WCR-C

0.6A, 60V

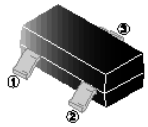
NPN Silicon General Purpose Transistor

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

FEATURES

- High Conductance
- Moisture Sensitivity Level 1
- AEC-Q101 Qualified

SOT-323



MECHANICAL DATA

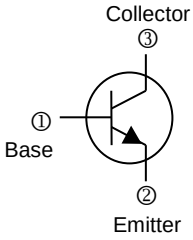
- Case: Molded Plastic
- Epoxy: UL 94V-0 Rate Flame Retardant
- Lead: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Mounting Position: Any

MARKING

K3X

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-323	3K	7 inch



ORDER INFORMATION

Part Number	Type
MMBT4401WCR-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	
Emitter-Base Voltage	V_{EBO}	6	
Collector Current-Continuous	I_C	600	mA
Total Device Dissipation	P_D	200	mW
Thermal Resistance Junction-Ambient [1]	$R_{\theta JA}$	625	℃/W
Junction, Storage Temperature Range	T_J, T_{STG}	-55~150	℃

Note:
1. Device mounted on FR-4 PCB 1.0 x 1.0 x 0.06 inch.

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ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	60	-	-	V	I_C=10mA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40	-	-		I_C=1mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	-	-		I_E=100μA, I_C=0
Collector Cut-off Current	I_{CEO}	-	-	100	nA	V_{CE}=35V, I_B=0
Emitter Cut-off Current	I_{CBO}	-	-	100		V_{CB}=30V, I_E=0
Emitter Cut-Off Current	I_{EBO}	-	-	100		V_{EB}=5V, I_C=0
DC Current Gain	h_{FE}	100	-	300		I_C=150mA, V_{CE}=1V
		40	-	-		I_C=500A, V_{CE}=2V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	I_C=150mA, I_B=15mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-	-	0.95	V	I_C=150mA, I_B=15mA
Transition Frequency	f_T	-	250	-	MHz	I_C=20mA, V_{CE}=10V, f=100MHz
Delay Time	t_d	-	15	-	nS	V_{CC}=30V, $V_{BE(off)}$=0.2V, I_C=150mA, I_{B1}=15mA
Rise Time	t_r	-	20	-		
Storage Time	t_s	-	225	-		V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA
Fall Time	t_f	-	30	-		

TYPICAL CHARACTERISTICS

Fig. 1-Static Characteristic

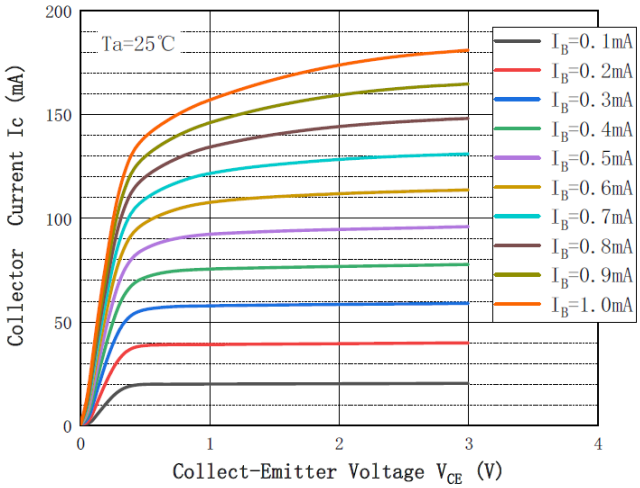
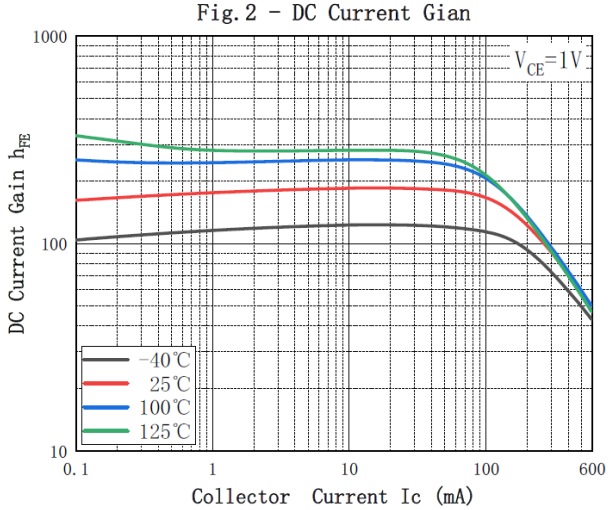


Fig. 2 - DC Current Gian



TYPICAL CHARACTERISTICS

Fig. 3 - Collect-Emitter Saturation Voltage

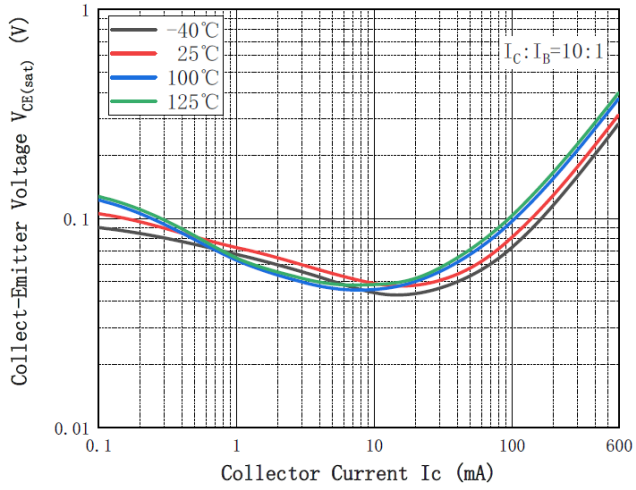


Fig. 4 - Base-Emitter Voltage

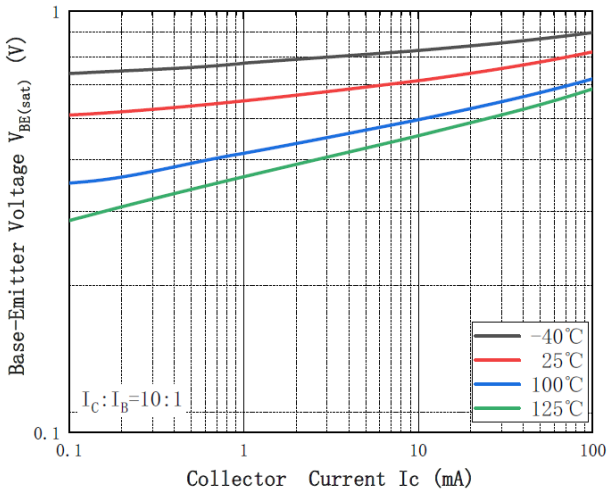


Fig. 5 - Base-Emitter On Voltage

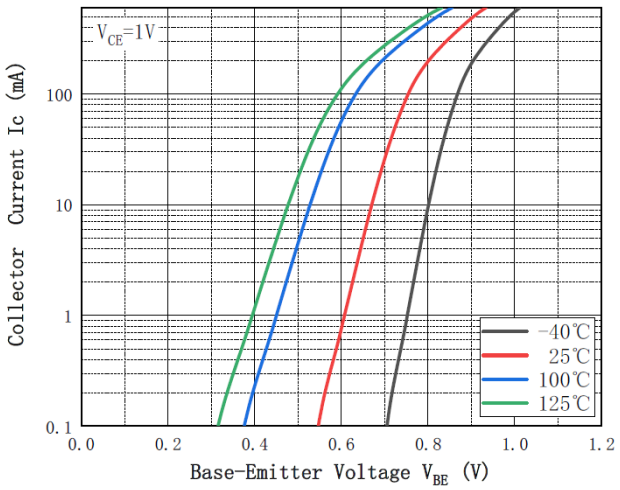


Fig. 6 - Cob/Cib—V_{CB}/V_{EB}

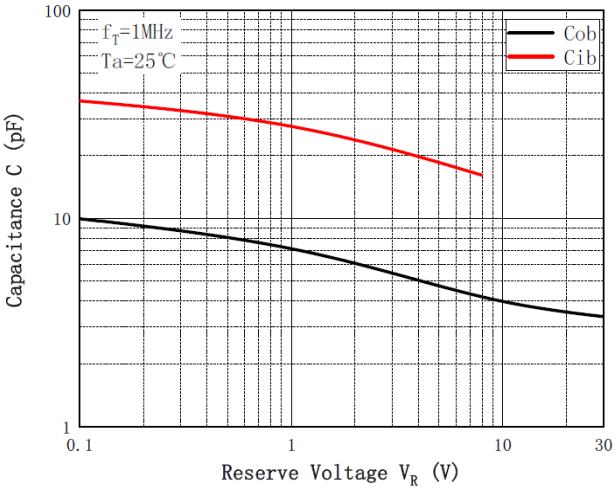
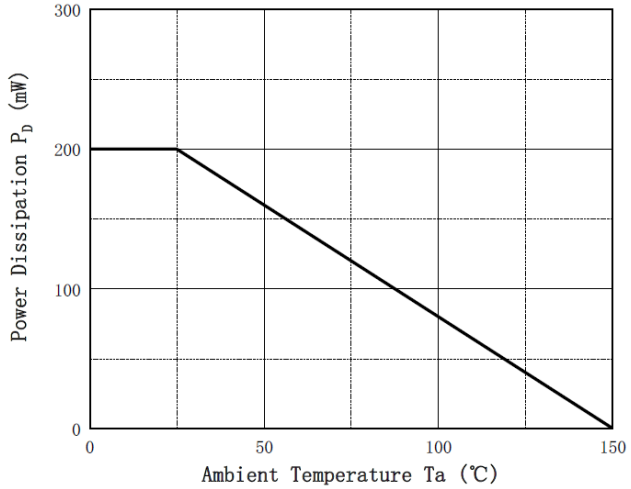
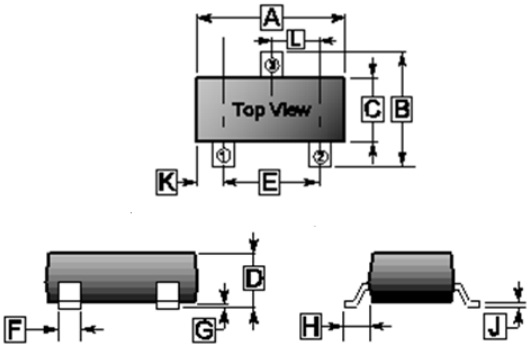


Fig. 7 - Power Derating Curve



PACKAGE OUTLINE DIMENSIONS

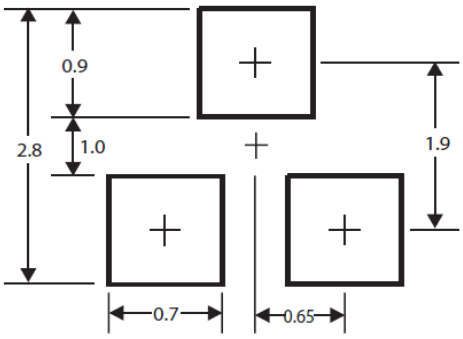
SOT-323



REF.	Millimeter	
	Min.	Max.
A	1.80	2.20
B	1.80	2.55
C	1.10	1.40
D	0.80	1.15
E	1.20	2.00
F	0.15	0.50
G	0.10 REF.	
H	0.525 REF.	
J	0.05	0.25
K	0.35 REF.	
L	0.65 TYP.	

MOUNTING PAD LAYOUT

SOT-323



*Dimensions in millimeters