

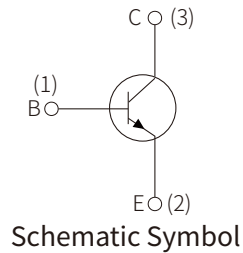
FEATURES

- | Complementary to MMBT5401Q
- | Ideal for Medium Power Amplification and Switching
- | Meet AEC-Q101 Requirements



MECHANICAL DATA

- | SOT-23 small outline plastic package
- | Epoxy UL: 94V-0
- | Mounting position: Any



APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	
Emitter-Base Voltage	V_{EBO}	6	
Collector Current	I_C	600	mA
Collector Power Dissipation	P_C	300	mW
Base Current	I_B	300	mA
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS (T_A=25°C)

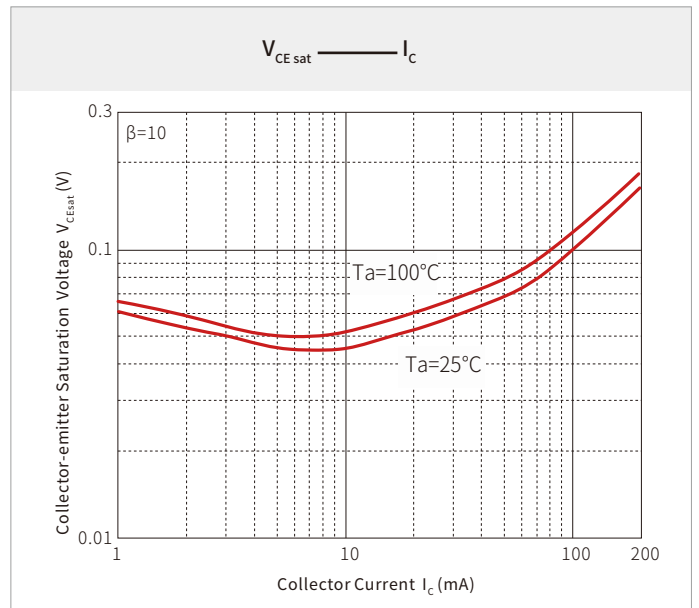
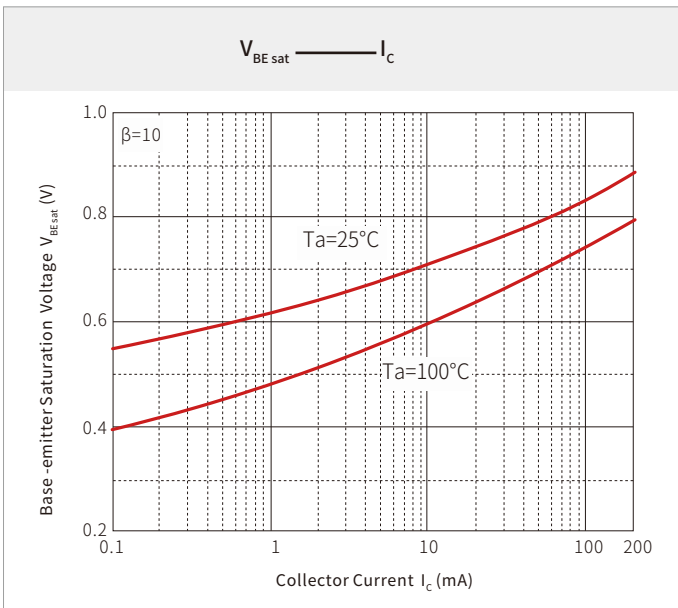
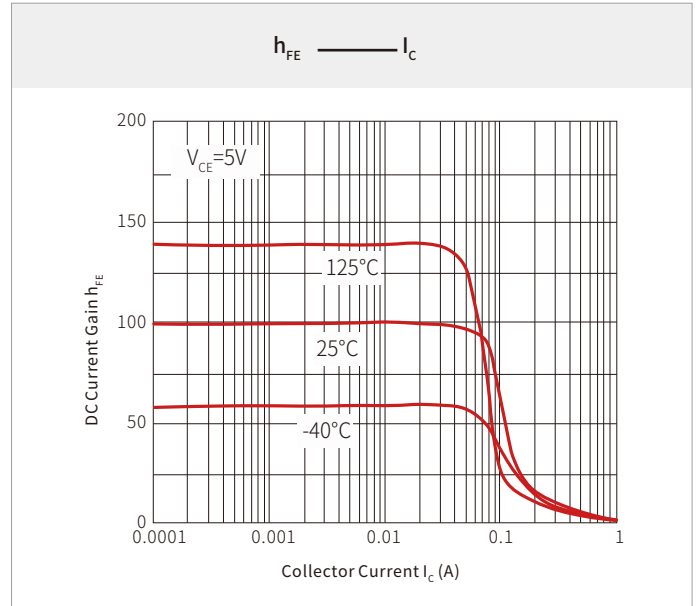
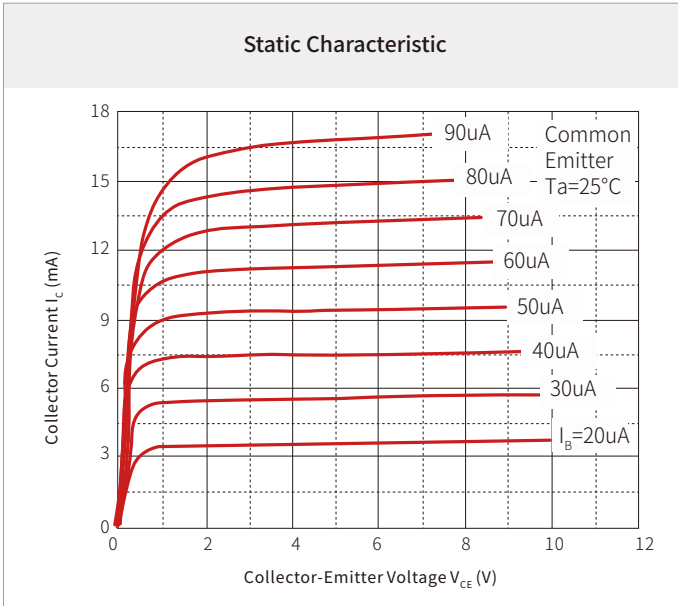
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector cut-off current	I _{CBO}	V _{CB} = 180V, I _E = 0			0.1	uA
Emitter cut-off current	I _{EBO}	V _{EB} = 6.0V, I _C = 0			0.1	
DC current gain	h _{FE(1)}	V _{CE} = 5V, I _C = 10mA	50	200	400	
	h _{FE(2)}	V _{CE} = 5V, I _C = 50mA	20	160		
	h _{FE(3)}	V _{CE} = 5V, I _C = 1.0mA	40	190		
Collector-emitter saturation voltage	V _{CE(sat)1*}	I _C = 10mA, I _B = 1.0mA		0.06	0.15	V
	V _{CE(sat)2*}	I _C = 50mA, I _B = 5.0mA		0.09	0.3	
Base-emitter saturation voltage	V _{BE(sat)1*}	I _C = 10mA, I _B = 1.0mA		0.7	1.0	
	V _{BE(sat)2*}	I _C = 50mA, I _B = 5.0mA		0.8	1.0	
Transition frequency	f _T	V _{CE} = 10V, I _C = 10mA	50	110		MHz
Collector output capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1.0MHz		2.2	5.0	pF
Base-Emitter Voltage	V _{BE}	V _{CE} = 5.0V, I _C = 10mA		0.68	0.75	V
Turn-on Time	t _{on}	I _C = 100mA, I _{B1} = -I _{B2} = 10mA		0.3		μs
Turn-off Time	t _{off}			0.4		μs
Storage Time	t _{stg}			0.2		μs

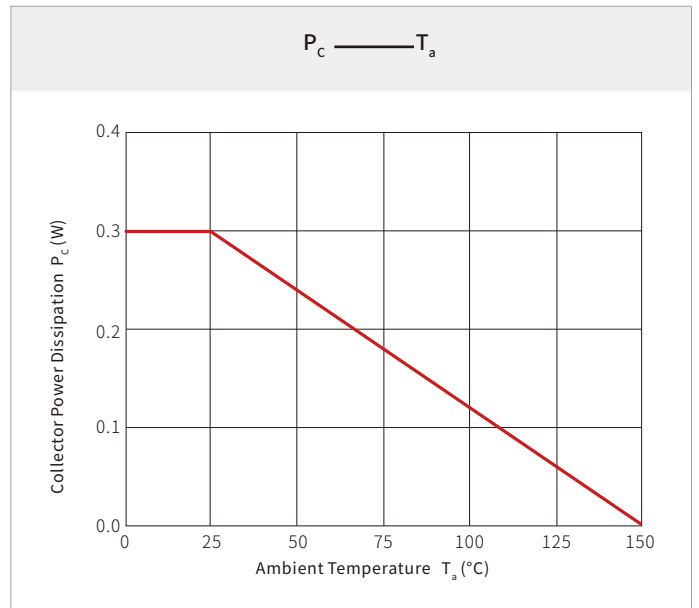
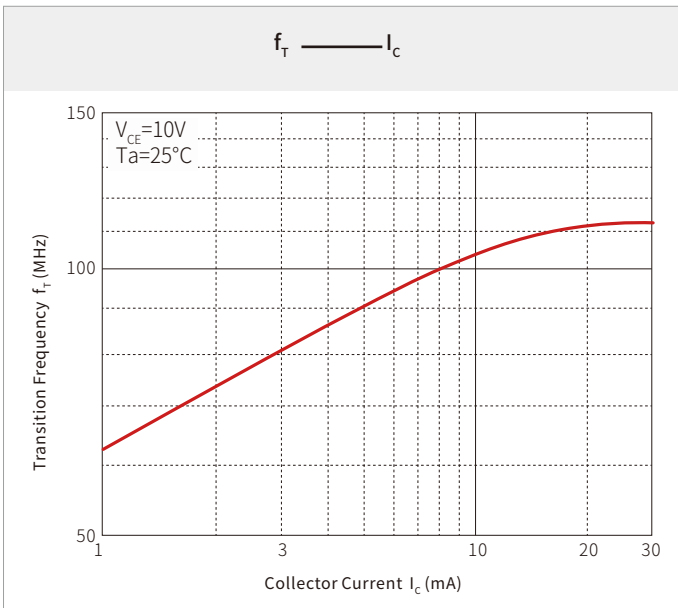
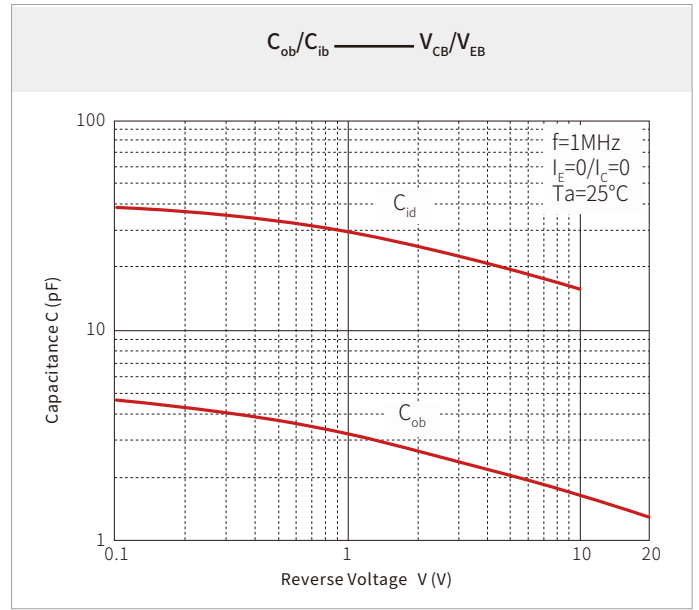
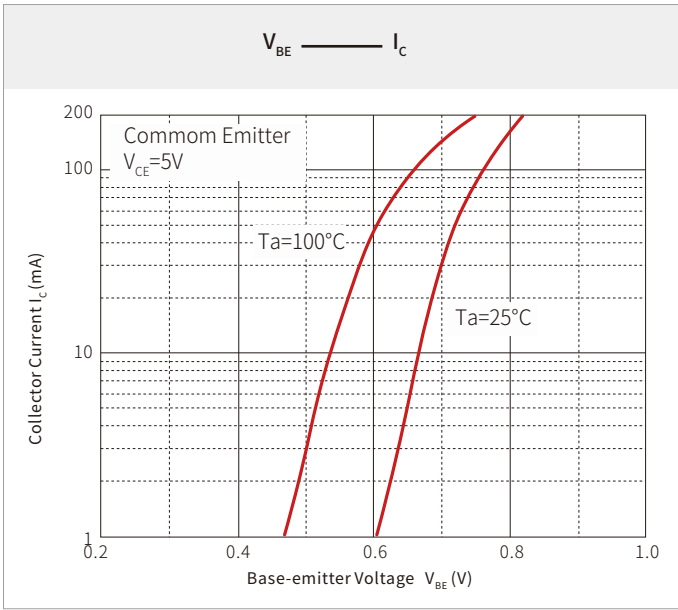
*Pulse test: pulse width ≤ 300μs, duty cycle ≤ 2.0%.

CLASSIFICATION OF H_{FE(1)}

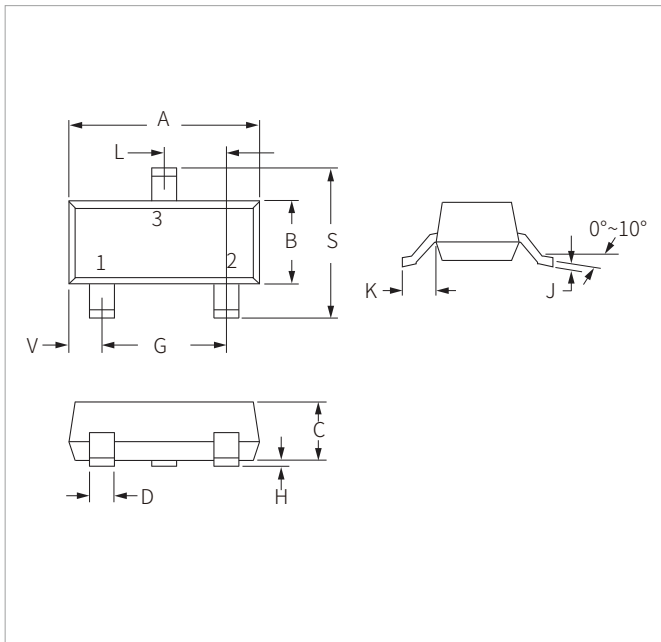
Rank	A	B	C
Range	50-150	100-300	200-400
Marking	QG1A	QG1B	QG1C

TYPICAL CHARACTERISTICS



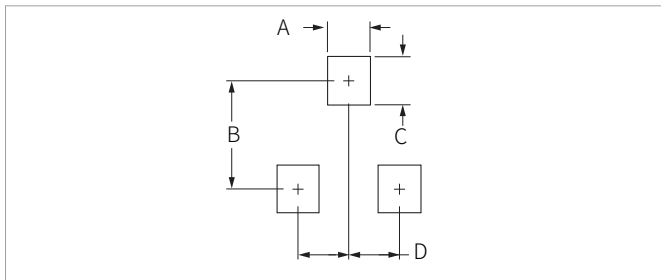


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.65	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
MMBT5551Q	SOT-23	3000PCS	7"

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By QR Code

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Wechat

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