AT-MMBT5551WK

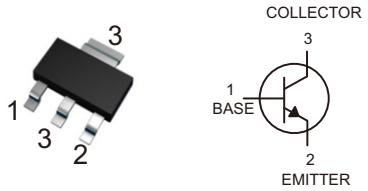
NPN TRANSISTOR

FEATURES

- Complementary to MMBT5401WK
- Ideal for Medium Power Amplification and Switching
- Qualified to AEC-Q101 Standards for High Reliability

PINNING

PIN	DESCRIPTION
1	BASE
2	EMITTER
3	COLLECTOR



Simplified outline SOT-223 and symbol

Automotive Grade

MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector–Base Voltage	V_{CBO}	180	V
Collector–Emitter Voltage	V_{CEO}	160	V
Emitter–Base Voltage	V_{EBO}	6	V
Collector Current — Continuous	I_C	600	mA
Collector Power Dissipation	P_C	1000	mW
Thermal Resistance From Junction To Ambient	R_{thJA}	125	℃/W
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	℃

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = 100uA, I_E = 0	180			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 1 mA, I_B = 0	160			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E = 10uA, I_C = 0	6			V
Collector cut-off current	I_{CBO}	V_{CB} = 120V, I_E = 0			50	nA
Emitter cut-off current	I_{EBO}	V_{EB} = 4V, I_C =0			50	nA
DC current gain	h_{FE1}	V_{CE} = 5V, I_C=1mA	80			
	h_{FE2}	V_{CE} = 5V, I_C = 10mA	100		300	
	h_{FE3}	V_{CE} = 5V, I_C = 50mA	50			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C = 10mA, I_B = 1mA			0.15	V
	$V_{CE(sat)2}$	I_C = 50mA, I_B = 5mA			0.2	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	I_C = 10mA, I_B = 1mA			1	V
	$V_{BE(sat)2}$	I_C = 50mA, I_B = 5mA			1	V
Transition frequency	f_T	V_{CE} = 10V, I_C = 10mA, f=100MHz	100		300	MHz
Collector output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f=1MHz			6	pF

TYPICAL CHARACTERICS

Fig.1 Static characteristics

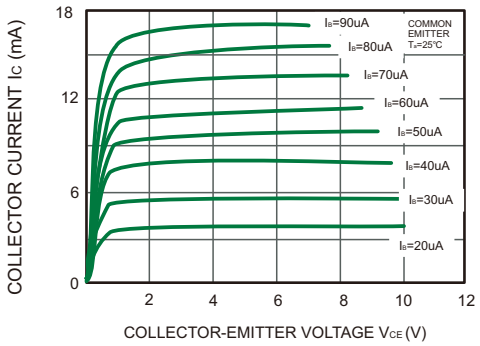


Fig.2 P_C —— T_a

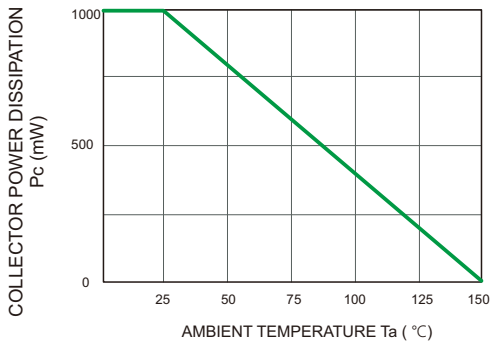


Fig.3 C_{ob} / C_{ib} —— V_{CB} / V_{EB}

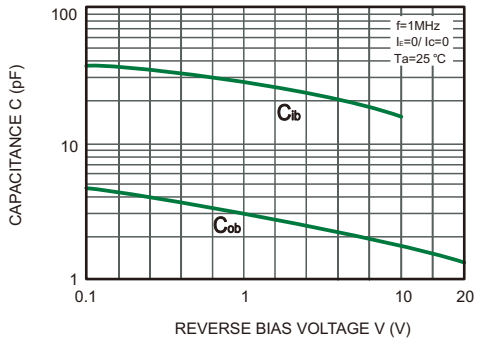


Fig.4 V_{CEsat} —— Ic

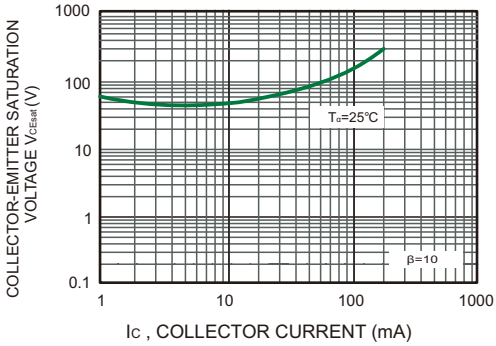


Fig.5 h_{FE}—Ic

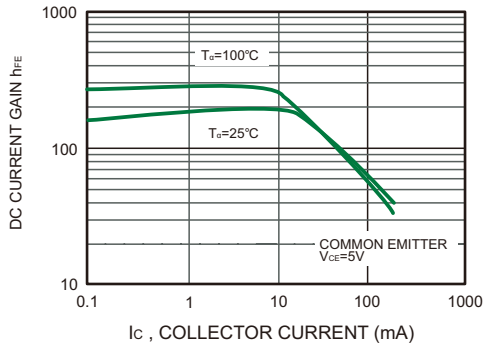


Fig.6 V_{BEsat} —— Ic

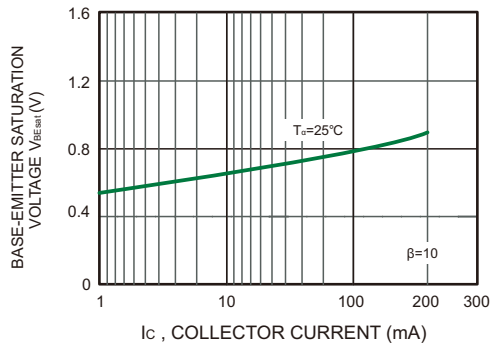


Fig.7 Ic —— V_{BE}

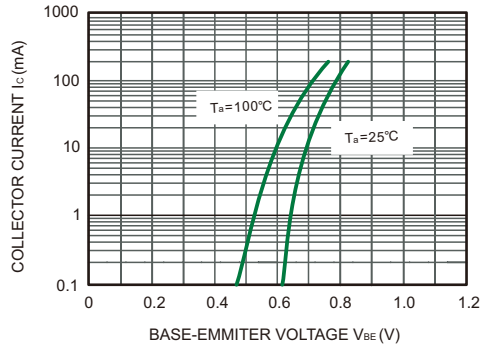
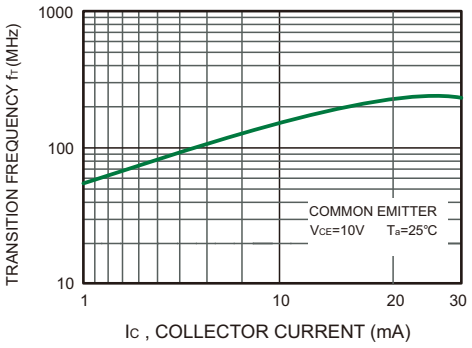
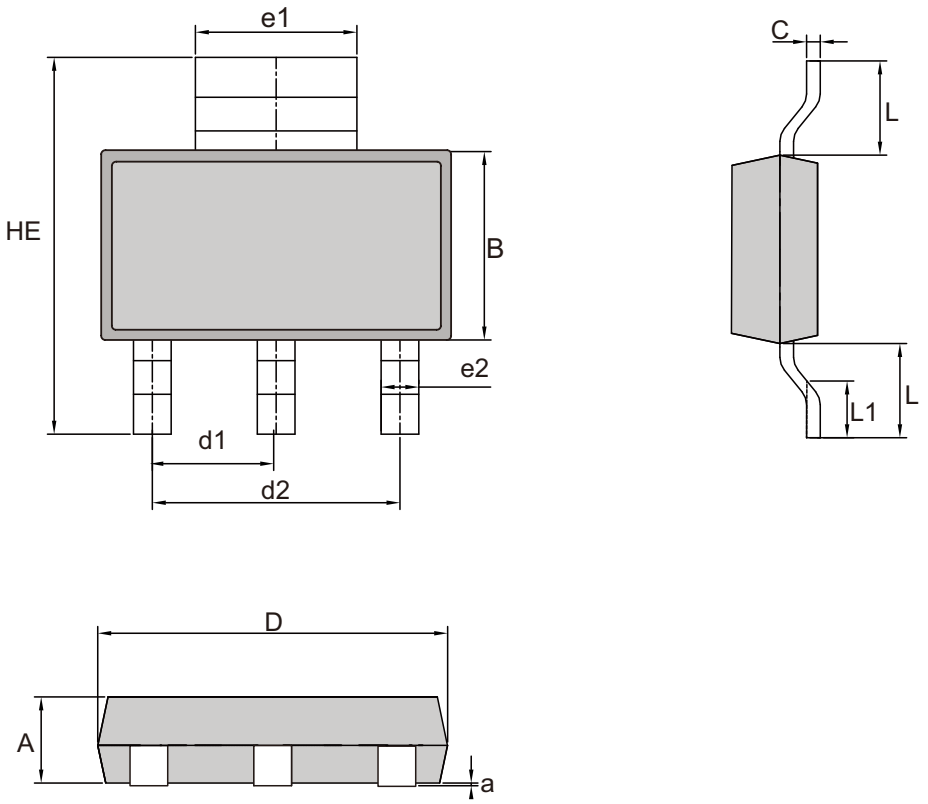


Fig.8 f_T ——Ic



SOT-223 Package Outline Dimensions



SOT-223 mechanical data

UNIT		A	B	C	D	d1	d2	e1	e2	HE	L	a	L1	ALL
mm	MAX	1.65	3.7	0.254	6.6	2.3	4.6	3.1	0.84	7.20	1.750	0.1	/	11~13°
	MIN	1.55	3.3	REF	6.4	BSC	BSC	2.9	0.66	6.80	REF	0	0.75	
mil	MAX	64.96	145.67	10.00	259.84	90.55	181.10	122.05	33.07	283.46	68.90	3.94	/	
	MIN	61.02	129.92	REF	251.97	BSC	BSC	114.17	25.98	267.72	REF	0.00	29.53	

Marking

Type number	Marking code
MMBT5551WK	5551

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