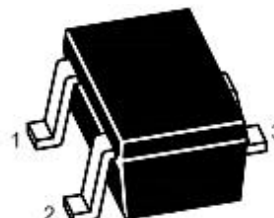


NPN Silicon Epitaxial Planar Transistor

for switching and amplifier applications



FEATURES

- Complementary to MMBT2907AW
- Small Package

MARKING:K3P/1P

1.Base 2.Emitter 3.Collector
SOT-323 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^{\circ}\text{C}$)

Parameter		Symbol	Value	Unit
Collector Base Voltage	MMBT2222W	V_{CBO}	60	V
	MMBT2222AW		75	
Collector Emitter Voltage	MMBT2222W	V_{CEO}	30	V
	MMBT2222AW		40	
Emitter Base Voltage	MMBT2222W	V_{EBO}	5	V
	MMBT2222AW		6	
Collector Current		I_c	600	mA
Power Dissipation		P_{tot}	150	mW
Junction Temperature		T_j	150	$^{\circ}\text{C}$
Storage Temperature Range		T_{stg}	- 55 to + 150	$^{\circ}\text{C}$



Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at V _{CE} = 10 V, I _C = 0.1 mA at V _{CE} = 10 V, I _C = 1 mA at V _{CE} = 10 V, I _C = 10 mA at V _{CE} = 1 V, I _C = 150 mA at V _{CE} = 10 V, I _C = 150 mA at V _{CE} = 10 V, I _C = 500 mA	h _{FE}	35	-	-
	h _{FE}	50	-	-
	h _{FE}	75	-	-
	h _{FE}	50	-	-
	h _{FE}	100	300	-
	h _{FE}	30	-	-
	h _{FE}	40	-	-
	MMBT2222W MMBT2222AW			
Collector Base Cutoff Current at V _{CB} = 50 V at V _{CB} = 60 V	I _{CBO}	-	100	nA
		-	100	
Emitter Base Cutoff Current at V _{EB} = 3 V	I _{EBO}	-	100	nA
Collector Base Breakdown Voltage at I _C = 10 μA	V _{(BR)CBO}	60	-	V
		75	-	
Collector Emitter Breakdown Voltage at I _C = 10 mA	V _{(BR)CEO}	30	-	V
		40	-	
Emitter Base Breakdown Voltage at I _E = 10 μA	V _{(BR)EBO}	5	-	V
		6	-	
Collector Emitter Saturation Voltage at I _C = 150 mA, I _B = 15 mA at I _C = 500 mA, I _B = 50 mA	V _{CE(sat)}	-	0.4	V
		-	0.3	
		-	1.6	
		-	1	
Base Emitter Saturation Voltage at I _C = 150 mA, I _B = 15 mA at I _C = 500 mA, I _B = 50 mA	V _{BE(sat)}	-	1.3	V
		0.6	1.2	
		-	2.6	
		-	2	
Transition Frequency at V _{CE} = 20 V, -I _E = 20 mA, f = 100 MHz	f _T	300	-	MHz
Collector Output Capacitance at V _{CB} = 10 V, f = 100 KHz	C _{ob}	-	8	pF
Delay Time at V _{CC} = 30 V, V _{BE(OFF)} = 0.5 V, I _C = 150 mA, I _{B1} = 15 mA	t _d	-	10	ns
Rise Time at V _{CC} = 30 V, V _{BE(OFF)} = 0.5 V, I _C = 150 mA, I _{B1} = 15 mA	t _r	-	25	ns
Storage Time at V _{CC} = 30 V, I _C = 150 mA, I _{B1} = -I _{B2} = 15 mA	t _{stg}	-	225	ns
Fall Time at V _{CC} = 30 V, I _C = 150 mA, I _{B1} = -I _{B2} = 15 mA	t _f	-	60	ns



CHINA BASE
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SOT-323



MMBT2222W / MMBT2222AW

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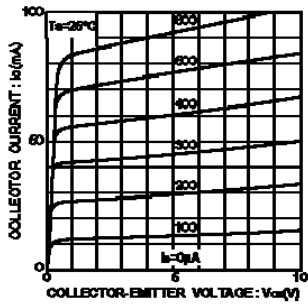


Fig.1 Grounded emitter output characteristics

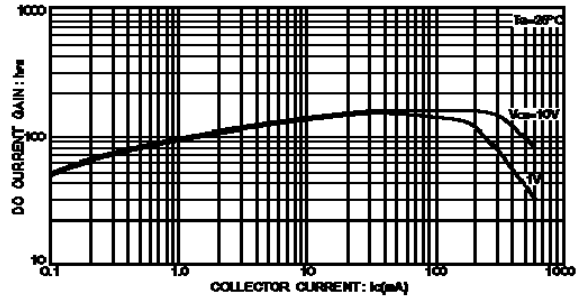


Fig.3 DC current gain vs. collector current (I)

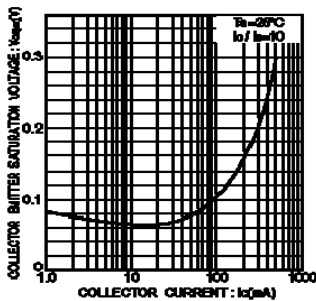


Fig.2 Collector-emitter saturation voltage vs. collector current

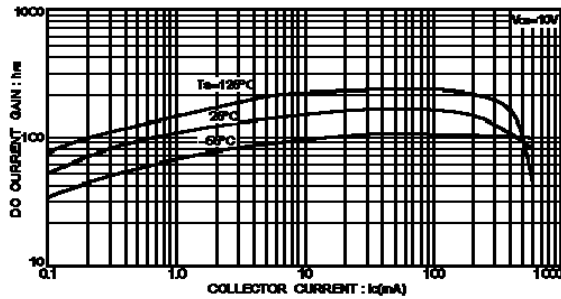


Fig.4 DC current gain vs. collector current(II)

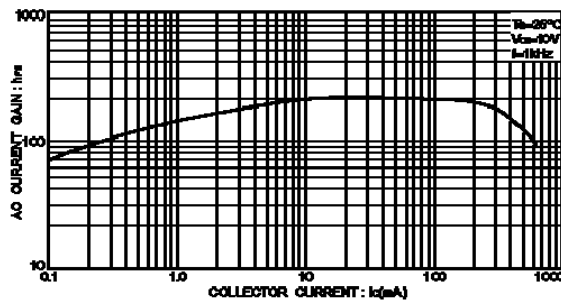


Fig.5 AC current gain vs. collector current

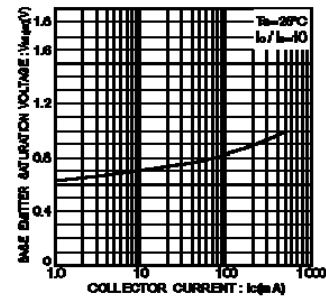
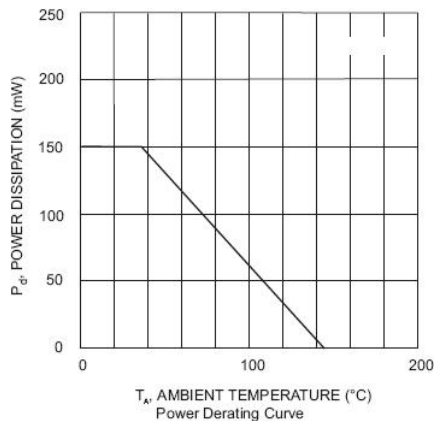
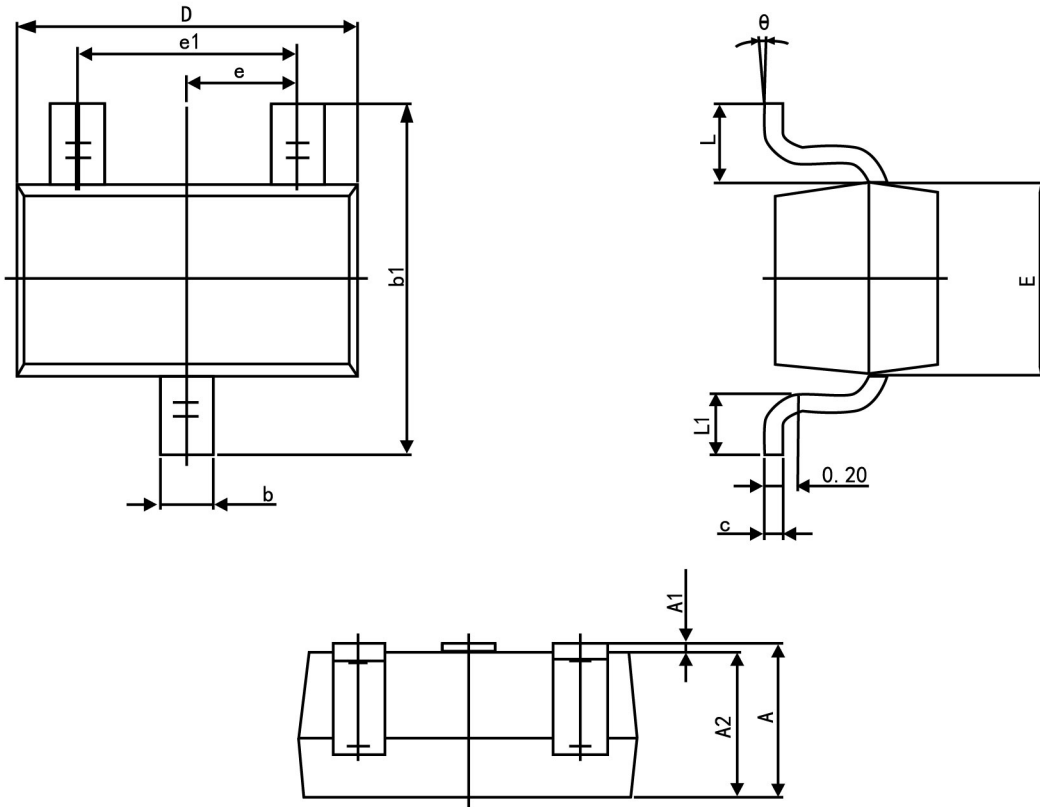


Fig.6 Base-emitter saturation voltage vs. collector current





SOT-323 Package Outline Dimensions



Symbol	Dimension in Millimeters	
	Min	Max
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.200	0.400
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.460
θ	0°	8°