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PNP Medium Power Transistor (Switching)

SST4403 / MMST4403 / 2N4403

●Features

- 1) $BV_{CEO} = -40V$ (Min.) ; at $I_C = -1mA$
- 2) Complements the SST4401 / MMST4401 / PN4401

●Package, marking, and packaging specifications

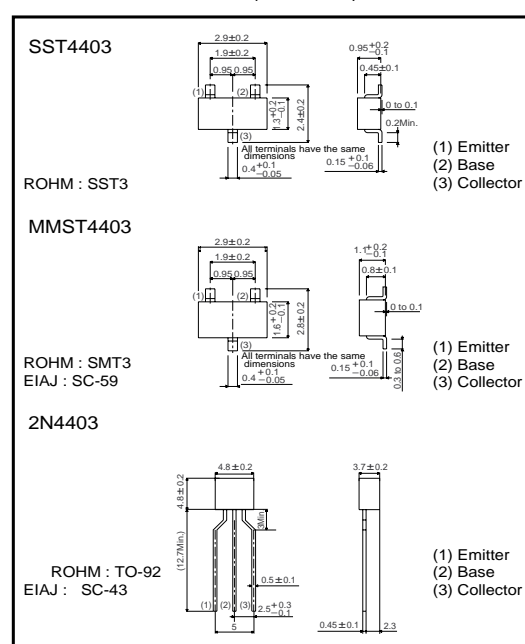
Part No.	SST4403	MMST4403	2N4403
Packaging type	SST3	SMT3	TO-92
Marking	R2X	R2X	-
Code	T116	T146	T93
Basic ordering unit (pieces)	3000	3000	3000

●Absolute maximum ratings ($T_a = 25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	-40	V
Collector-emitter voltage	V_{CEO}	-40	V
Emitter-base voltage	V_{EBO}	-6	V
Collector current	I_C	-0.6	A
Collector power dissipation	SST4403 MMST4403	0.2	W
	SST4403 MMST4403	0.35	W
	2N4403	0.625	W
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

* Mounted on a 7x5x0.6mm CERAMIC SUBSTRATE

●External dimensions (Unit : mm)



●Electrical characteristics ($T_a = 25^\circ C$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-40	-	-	V	$I_C = -100\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-40	-	-	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	-5	-	-	V	$I_E = -100\mu A$
Collector cutoff current	I_{CBO}	-	-	-0.1	μA	$V_{CB} = -35V$
Emitter cutoff current	I_{EBO}	-	-	-0.1	μA	$V_{EB} = -5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	-0.4	V	$I_C/I_E = -150mA/-15mA$
		-	-	-0.75	V	$I_C/I_E = -500mA/-50mA$
Base-emitter saturation voltage	$V_{BE(sat)}$	-0.75	-	-0.95	V	$I_C/I_E = -150mA/-15mA$
		-	-	-1.3	V	$I_C/I_E = -500mA/-50mA$
DC current transfer ratio	h_{FE}	30	-	-	-	$V_{CE} = -1V, I_C = -0.1mA$
		60	-	-	-	$V_{CE} = -1V, I_C = -1mA$
		100	-	-	-	$V_{CE} = -1V, I_C = -10mA$
		100	-	300	-	$V_{CE} = -1V, I_C = -150mA$
Transition frequency	f_T	20	-	-	MHz	$V_{CE} = -2V, I_C = -500mA$
		200	-	-	MHz	$V_{CE} = -10V, I_E = 20mA, f = 100MHz$
Collector output capacitance	C_{ob}	-	-	8.5	pF	$V_{CB} = -10V, f = 100kHz$
Emitter input capacitance	C_{ib}	-	-	30	pF	$V_{EB} = -0.5V, f = 100kHz$
Delay time	t_d	-	-	15	ns	$V_{CC} = -30V, V_{EB(OFF)} = -2V, I_C = -150mA, I_{B1} = -15mA$
Rise time	t_r	-	-	20	ns	$V_{CC} = -30V, V_{EB(OFF)} = -2V, I_C = -150mA, I_{B1} = -15mA$
Storage time	t_{stg}	-	-	225	ns	$V_{CC} = -30V, I_C = -150mA, I_{B1} = -I_{B2} = -15mA$
Fall time	t_f	-	-	30	ns	$V_{CC} = -30V, I_C = -150mA, I_{B1} = -I_{B2} = -15mA$

Transistors

●Electrical characteristic curves

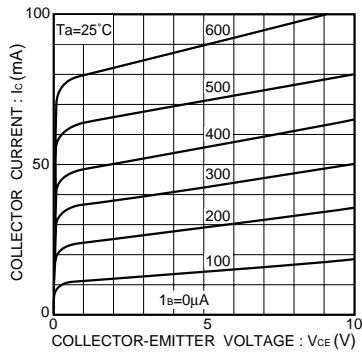


Fig.1 Grounded emitter output characteristics

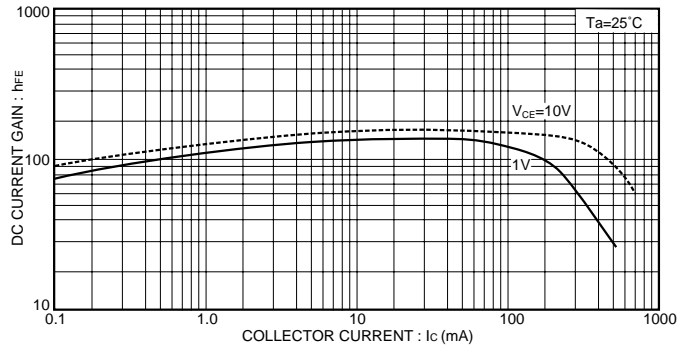


Fig.3 DC current gain vs. collector current (I)

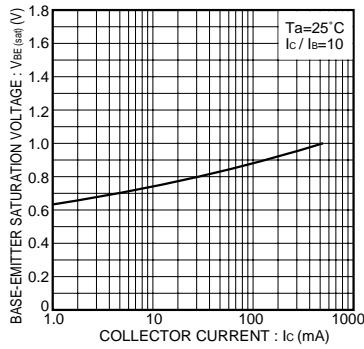


Fig.2 Base-emitter saturation voltage vs. collector current

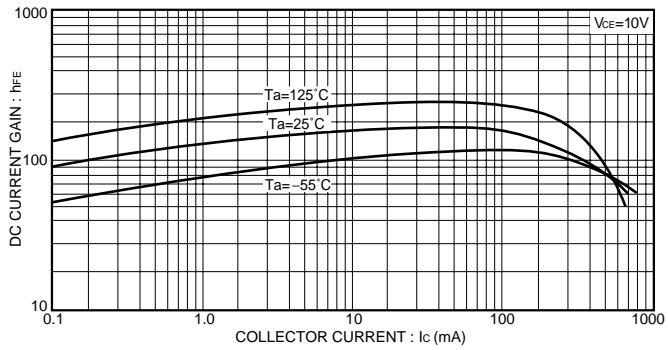


Fig.4 DC current gain vs. collector current (II)

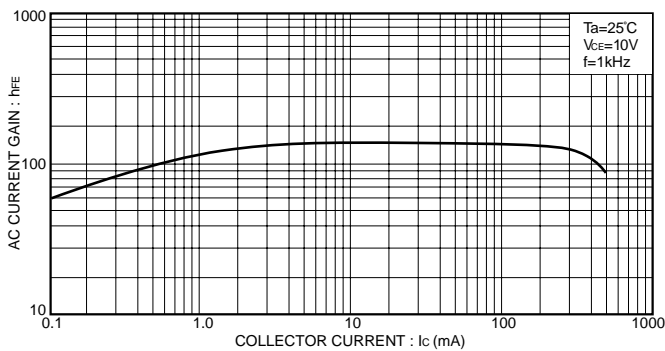


Fig.5 AC current gain vs. collector current

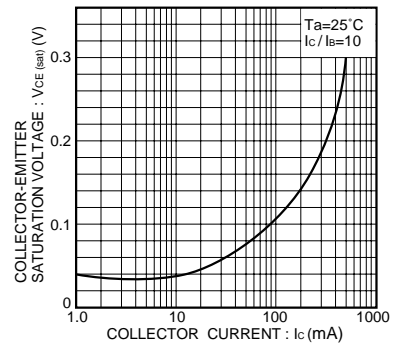


Fig.6 Collector-emitter saturation voltage vs. collector current

Transistors

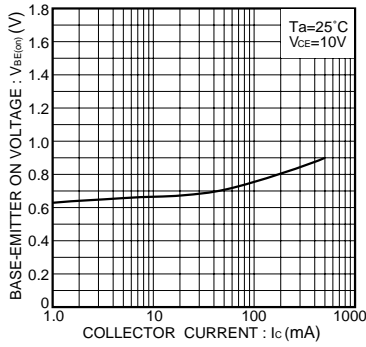


Fig.7 Grounded emitter propagation characteristics

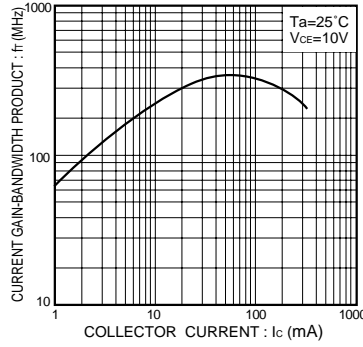


Fig.8 Gain bandwidth product vs. collector current

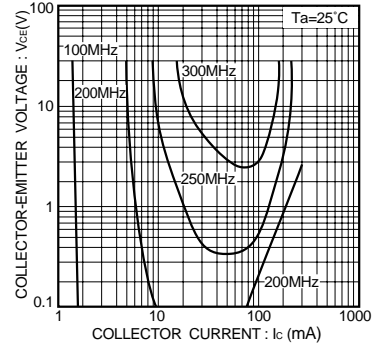


Fig.9 Gain bandwidth product

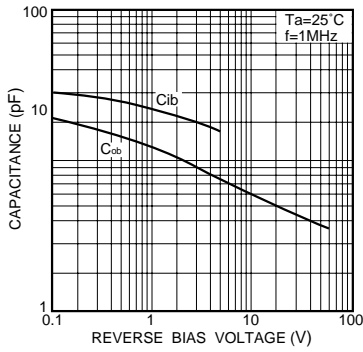


Fig.10 Input/output capacitance vs. voltage

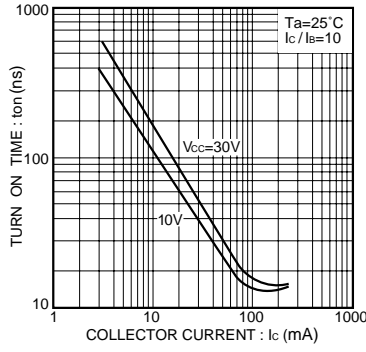


Fig.11 Turn-on time vs. collector current

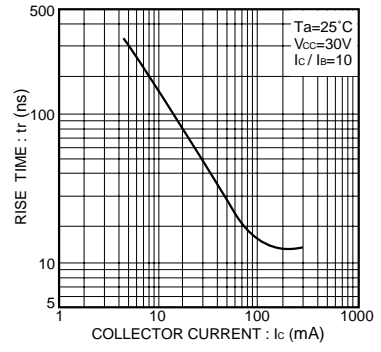


Fig.12 Rise time vs. collector current

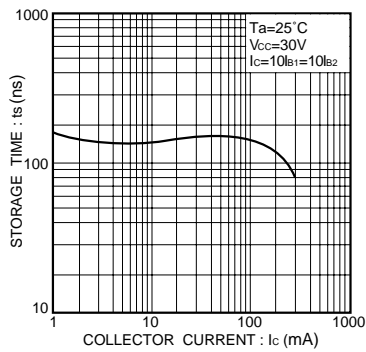


Fig.13 Storage time vs. collector current

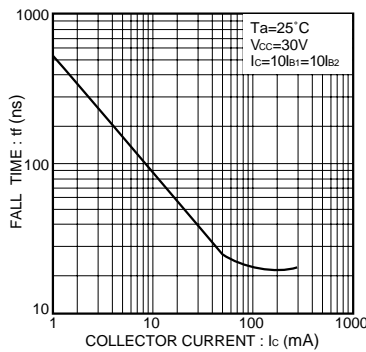


Fig.14 Fall time vs. collector current

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