

UMT3906 / SST3906 / MMST3906 / 2N3906

- 1) $BV_{CEO} > -40V$ ($I_C = -1mA$)
- 2) Complements the UMT3904 / SST3904 / MMST3904 / 2N3904.

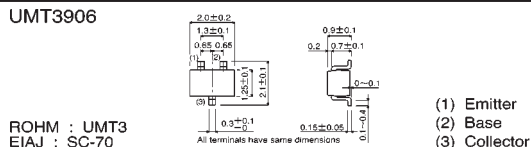
Part No.	UMT3906	SST3906	MMST3906	2N3906
Packaging type	UMT3	SST3	SMT3	TO-92
Marking	R2A	R2A	R2A	—
Code	T106	T116	T146	T93
Basic ordering unit (pieces)	3000	3000	3000	3000

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CB0}	-40	V
Collector-emitter voltage		V_{CE0}	-40	V
Emitter-base voltage		V_{EB0}	-5	V
Collector current		I_c	-0.2	A
Collector power dissipation	UMT3906	P _c	0.2	W
	SST3906, MMST3906		0.3	W
	2N3906		0.625	W
Junction temperature		T _j	150	°C
Storage temperature		T _{stg}	-55~+150	°C

* When mounted on a 7×5×0.6mm ceramic board.

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-40	—	—	V	$I_C = -10\ \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-40	—	—	V	$I_C = -10mA$
Emitter-base breakdown voltage	BV_{EBO}	-5	—	—	V	$I_E = -10\ \mu A$
Collector cutoff current	I_{CES}	—	—	-50	nA	$V_{CE} = -30V$
Emitter cutoff current	I_{EBO}	—	—	-50	nA	$V_{EB} = -3V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	-0.25	V	$I_C/I_E = -10mA/-1mA$
		—	—	-0.4		$I_C/I_E = -50mA/-5mA$
Base-emitter saturation voltage	$V_{BE(sat)}$	0.65	—	-0.85	V	$I_C/I_E = -10mA/-1mA$
		—	—	-0.95		$I_C/I_E = -50mA/-5mA$
DC current transfer ratio	h_{FE}	60	—	—	—	$V_{CE} = -1V, I_C = -0.1mA$
		80	—	—		$V_{CE} = -1V, I_C = -1mA$
		100	—	300		$V_{CE} = -1V, I_C = -10mA$
		60	—	—		$V_{CE} = -1V, I_C = -50mA$
		30	—	—		$V_{CE} = -1V, I_C = -100mA$
Transition frequency	f_T	250	—	—	MHz	$V_{CE} = -20V, I_E = 10mA, f = 100MHz$
Collector output capacitance	C_{ob}	—	—	4.5	pF	$V_{CE} = -10V, f = 100kHz$
Emitter input capacitance	C_{ib}	—	—	10	pF	$V_{EB} = -0.5V, f = 100kHz$
Delay time	t_d	—	—	35	ns	$V_{CC} = -3V, V_{BE(OFF)} = -0.5V, I_C = -10mA, I_{B1} = -1mA$
Rise time	t_r	—	—	35	ns	$V_{CC} = -3V, V_{BE(OFF)} = -0.5V, I_C = -10mA, I_{B1} = -1mA$
Storage time	t_{stg}	—	—	225	ns	$V_{CC} = -3V, I_C = -10mA, I_{B1} = -I_{B2} = -1mA$
Fall time	t_f	—	—	75	ns	$V_{CC} = -3V, I_C = -10mA, I_{B1} = -I_{B2} = -1mA$

UMT3906



EIAJ : SC-70

SST3906

ROHM : SST3

Dimensions (mm):

- Top width: 2.9 ± 0.2
- Top width (inner): 1.9 ± 0.2
- Top width (inner): 0.5 ± 0.05
- Top width (inner): 0.4 ± 0.1
- Top width (inner): 0.8 ± 0.1
- Top width (inner): $0.0 \sim 0.1$
- Top width (inner): 0.2 Min.
- Top width (inner): 0.15 ± 0.1
- Top width (inner): 0.05 ± 0.05
- Top width (inner): 0.2 ± 0.2

Pin connections:

- (1) Emitter
- (2) Base
- (3) Collector

All dimensions have same dimensions.

ROHM : SST3

MM523906

Top View Dimensions:

- Overall width: 2.9 ± 0.2 inches
- Distance between mounting holes: 1.0 ± 0.2 inches
- Distance from mounting hole to center: 0.39 ± 0.01 inches
- Distance from mounting hole to base: 0.28 ± 0.02 inches
- Distance from mounting hole to emitter: 0.4 ± 0.1 inches
- Distance from mounting hole to collector: 0.4 ± 0.1 inches
- Distance from mounting hole to base: 0.4 ± 0.1 inches
- Distance from mounting hole to emitter: 0.4 ± 0.1 inches
- Distance from mounting hole to collector: 0.4 ± 0.1 inches

Side View Dimensions:

- Overall height: 1.1 ± 0.2 inches
- Distance from mounting hole to base: 0.8 ± 0.1 inches
- Distance from mounting hole to emitter: 0.4 ± 0.1 inches
- Distance from mounting hole to collector: 0.4 ± 0.1 inches

ROHM : SMT3
EIAJ : SC-59

(1) Emitter
(2) Base
(3) Collector

EIAJ : SC-59

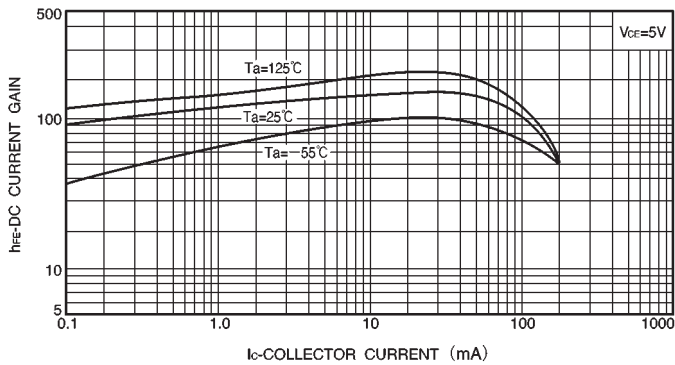
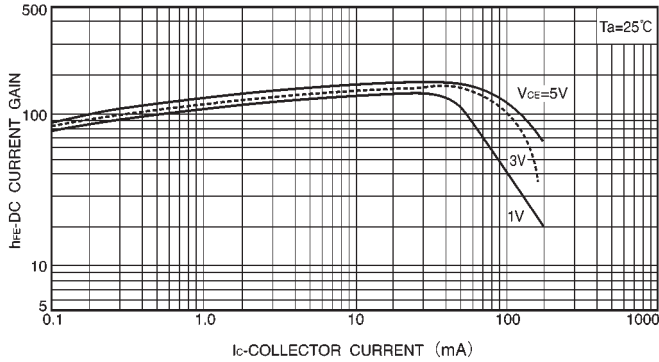
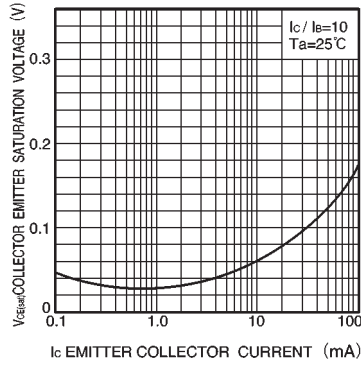
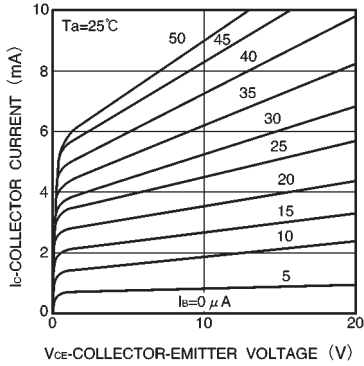
2N3906

ROHM : TO-92
EIAJ : SC-43

(1) Emitter
(2) Base
(3) Collector

EIAJ : SC-43

●Electrical characteristic curves



● Electrical characteristic curves

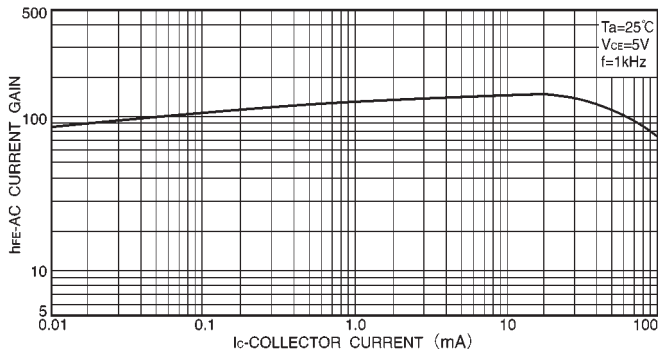


Fig.5 AC current gain vs. collector current

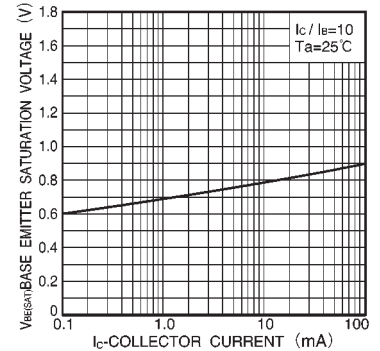


Fig.6 Base-emitter saturation voltage vs. collector current

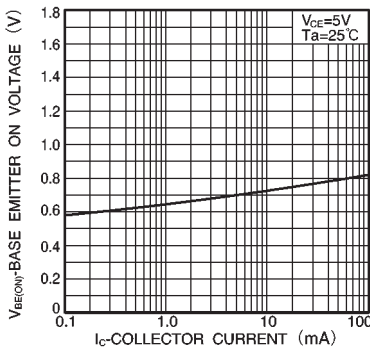


Fig.7 Grounded emitter propagation characteristics

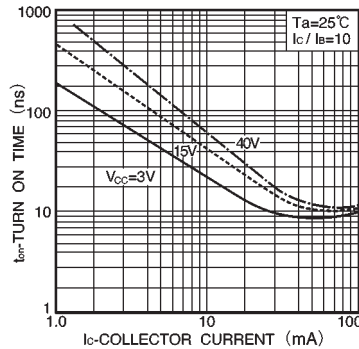


Fig.8 Turn-on time vs. collector current

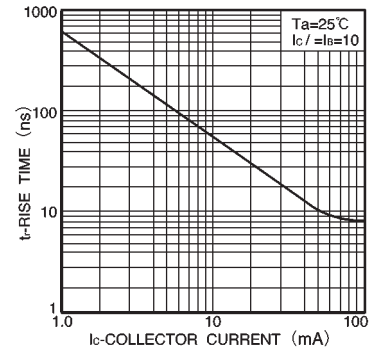


Fig.9 Rise time vs. collector current

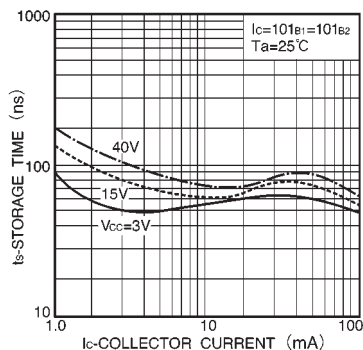


Fig.10 Storage time vs. collector current

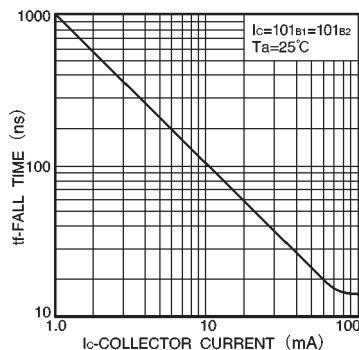


Fig.11 Fall time vs. collector current

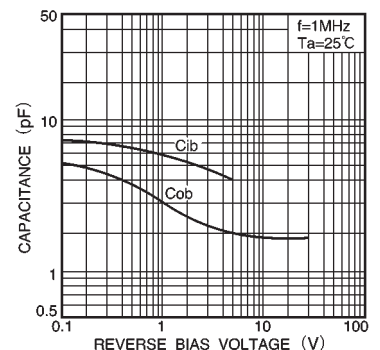


Fig.12 Input / output capacitance vs. voltage

● Electrical characteristic curves

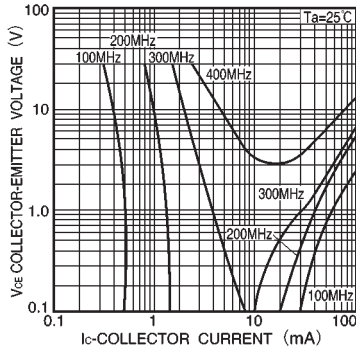


Fig.13 Gain bandwidth product

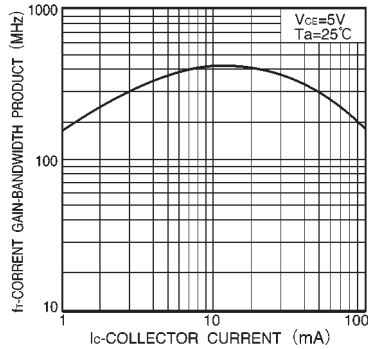


Fig.14 Gain bandwidth product vs. collector current

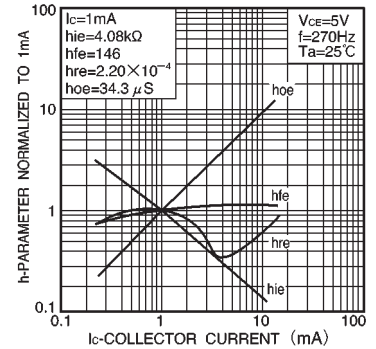


Fig.15 h parameter vs. collector current

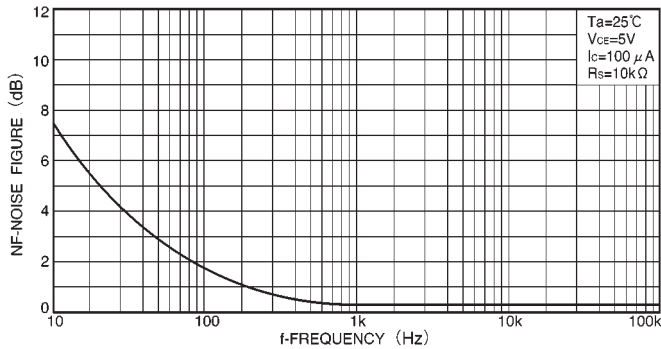


Fig.16 Noise vs. collector current

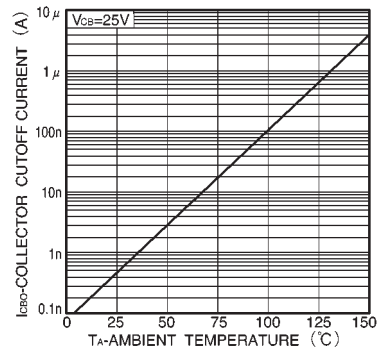


Fig.17 Noise characteristics (I)

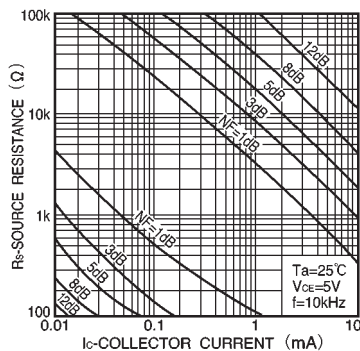


Fig.18 Noise characteristics (II)

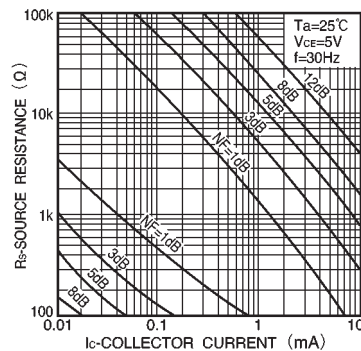


Fig.19 Noise characteristics (III)

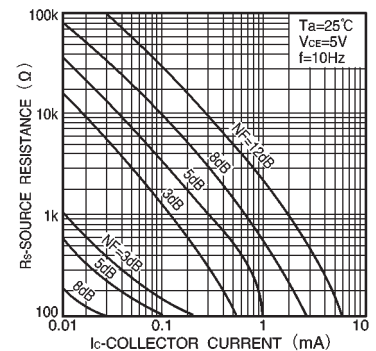


Fig.20 Noise characteristics (IV)