

PNP Medium Power Transistor (Switching)

UMT2907A / SST2907A / MMST2907A

●Features

- 1) $BV_{CEO} < -60V$ ($I_C = -10mA$)
- 2) Complements the UMT2222A / SST2222A / MMST2222A.

●Package, marking and packaging specifications

Part No.	UMT2907A	SST2907A	MMST2907A
Packaging type	UMT3	SST3	SMT3
Marking	R2F	R2F	R2F
Code	T106	T116	T146
Basic ordering unit (pieces)	3000	3000	3000

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	-60	V
Collector-emitter voltage	V_{CEO}	-60	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-0.6	A
Collector power dissipation	P_C	0.2	W
		0.35	W *
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

* Mounted on a 7x5x0.6mm ceramic substrate.

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-60	-	-	V	$I_C = -10\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-60	-	-	V	$I_C = -10mA$
Emitter-base breakdown voltage	BV_{EBO}	-5	-	-	V	$I_E = -10\mu A$
Collector cutoff current	I_{CBO}	-	-	-100	nA	$V_{CB} = -50V$
	I_{CES}	-	-	-100	nA	$V_{CB} = -30V$
Emitter cutoff current	I_{EBO}	-	-	-100	nA	$V_{EB} = -3V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	-0.4	V	$I_C/I_B = -150mA / -15mA$
		-	-	-1.6	V	$I_C/I_B = -500mA / -50mA$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-	-1.3	V	$I_C/I_B = -150mA / -15mA$
		-	-	-2.6	V	$I_C/I_B = -500mA / -50mA$
DC current transfer ratio	h_{FE}	75	-	-	-	$V_{CE} = -10V, I_C = -0.1mA$
		100	-	-	-	$V_{CE} = -10V, I_C = -1mA$
		100	-	-	-	$V_{CE} = -10V, I_C = -10mA$
		100	-	300	-	$V_{CE} = -10V, I_C = -150mA$
		50	-	-	-	$V_{CE} = -10V, I_C = -500mA$
Transition frequency	f_T	200	-	-	MHz	$V_{CE} = -20V, I_E = 50mA, f = 100MHz$
Collector output capacitance	C_{ob}	-	-	8	pF	$V_{CB} = -10V, f = 100kHz$
Emitter input capacitance	C_{ib}	-	-	30	pF	$V_{EB} = -2V, f = 100kHz$
Turn-on time	t_{on}	-	-	50	ns	$V_{CC} = -30V, V_{BE(OFF)} = -1.5V, I_C = -150mA, I_{B1} = -15mA$
Delay time	t_d	-	-	10	ns	$V_{CC} = -30V, V_{BE(OFF)} = -1.5V, I_C = -150mA, I_{B1} = -15mA$
Rise time	t_r	-	-	40	ns	$V_{CC} = -30V, V_{BE(OFF)} = -1.5V, I_C = -150mA, I_{B1} = -15mA$
Turn-off time	t_{off}	-	-	100	ns	$V_{CC} = -30V, I_C = -150mA, I_{B1} = I_{B2} = -15mA$
Storage time	t_{stg}	-	-	80	ns	$V_{CC} = -30V, I_C = -150mA, I_{B1} = I_{B2} = -15mA$
Fall time	t_f	-	-	30	ns	$V_{CC} = -30V, I_C = -150mA, I_{B1} = I_{B2} = -15mA$

●Dimensions (Unit : mm)

UMT2907A

ROHM : UMT3
EIAJ : SC-70

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

SST2907A

ROHM : SST3

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

MMST2907A

ROHM : SMT3
EIAJ : SC-59

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

Transistors

●Electrical characteristic curves

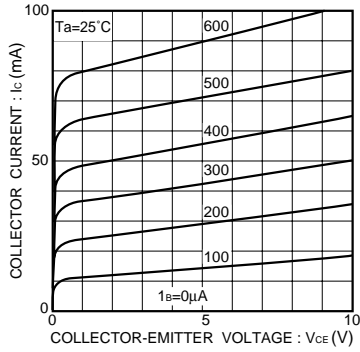


Fig.1 Grounded emitter output characteristics

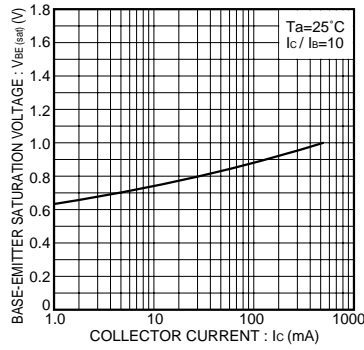


Fig.2 Base-emitter saturation voltage vs. collector current

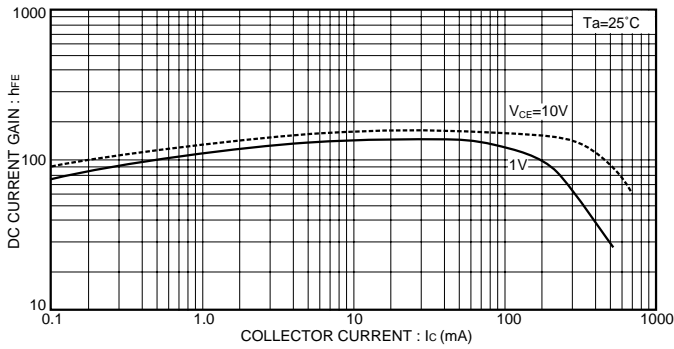


Fig.3 DC current gain vs. collector current (I)

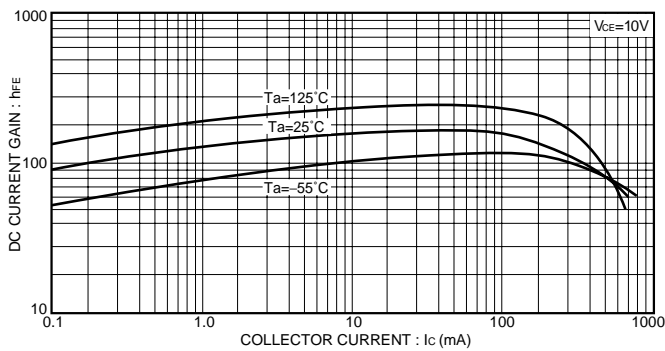


Fig.4 DC current gain vs. collector current (II)

Transistors

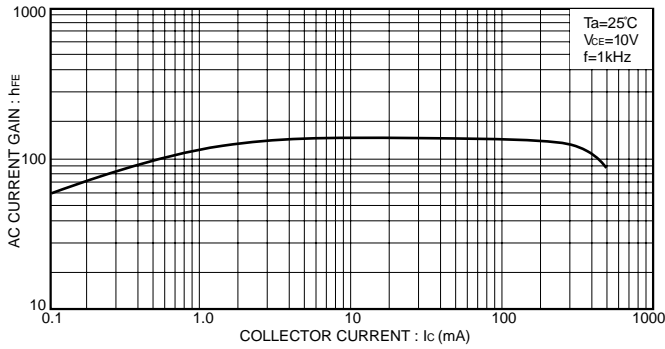


Fig.5 AC current gain vs. collector current

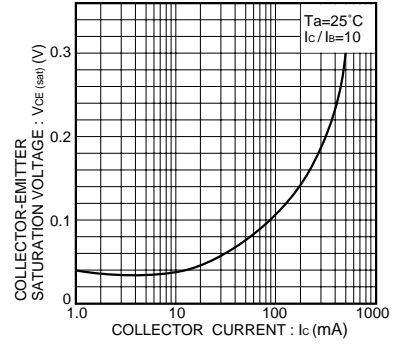


Fig.6 Collector-emitter saturation voltage vs. collector current

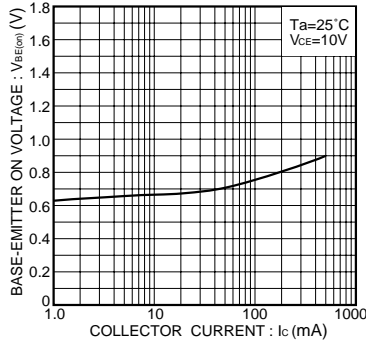


Fig.7 Grounded emitter propagation characteristics

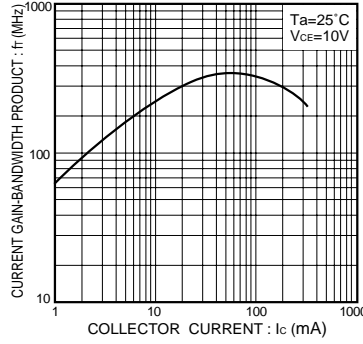


Fig.8 Gain bandwidth product vs. collector current

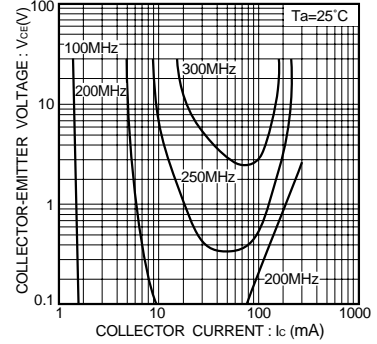


Fig.9 Gain bandwidth product

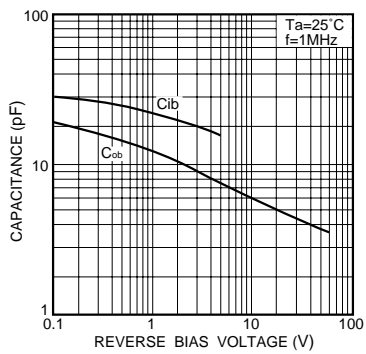


Fig.10 Input/output capacitance vs. voltage

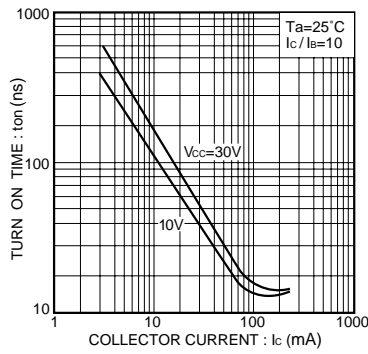


Fig.11 Turn-on time vs. collector current

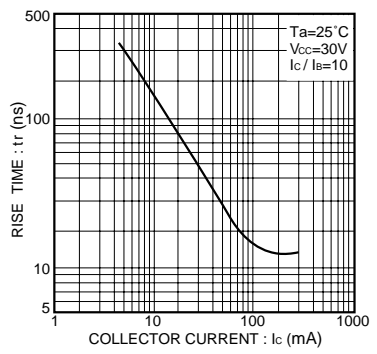


Fig.12 Rise time vs. collector current

Transistors

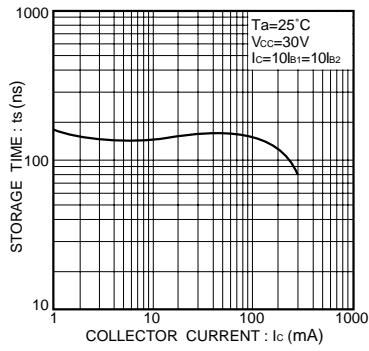


Fig.13 Storage time vs. collector current

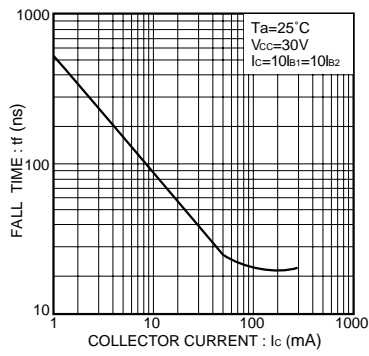


Fig.14 Fall time vs. collector current

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