

PNP Medium Power Transistor (Switching)

UMT2907A / SST2907A/MMST2907A / RXT2907A / PN2907A

●Features

- 1) $BV_{CE0} < -40V$ ($I_c = -10mA$)
- 2) Complements the UMT2222A/SST2222A/MMST2222A/RXT2222A/PN2222A.

●Package, marking and packaging specifications

Type	UMT2907A	SST2907A	MMST2907A	RXT2907A	PN2907A
Package	UMT3	SST3	SMT3	MPT3	TO-92
Marking	R2F	R2F	R2F	AC*	---
Code	T108	T116	T146	T100	T83
Basic ordering unit (pieces)	3000	3000	3000	1000	3000

* Indicates lot number.

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

Parameter	Symbol	Limite	Unit
Collector-base voltage	V_{CB0}	-60	V
Collector-emitter voltage	V_{CE0}	-60	V
Emitter-base voltage	V_{EB0}	-5	V
Collector current	I_c	-0.6	A
Collector power dissipation	UMT2907A, SST2907A, MMST2907A	0.2	W
	RXT2907A	0.5	
	PN2907A	0.625	
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55~150	$^\circ C$

●External dimensions (Units : 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

RXT2907A

ROHM : MPT3
EIAJ : SC-62

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

PN2907A

ROHM : TO-92
EIAJ : SC-43

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

USA & European specification models

(SPEC-A31)

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CEO}	-60	—	—	V	I _c =10 μA
Collector-emitter breakdown voltage	BV _{CE0}	-60	—	—	V	I _c =10mA
Emitter-base breakdown voltage	BV _{EB0}	-5	—	—	V	I _e =10 μA
Collector cutoff current	I _{CEO}	—	—	-100	nA	V _{CE} =-50V
	I _{CEB}	—	—	-100	nA	V _{CE} =-30V
Emitter cutoff current	I _{EB0}	—	—	-100	nA	V _{EB} =-3V
	I _{EBB}	—	—	-100	nA	V _{EB} =-3V
Collector-emitter saturation voltage	V _{CE(sat)}	—	—	-0.4	V	I _c /I _b =-150mA/-15mA
		—	—	-1.6		I _c /I _b =-500mA/-50mA
Base-emitter saturation voltage	V _{BE(sat)}	0.6	—	-1.3	V	I _c /I _b =-150mA/-15mA
		—	—	-2.6		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 _c =-50mA, f=100MHz
Output capacitance	C _{ob}	—	—	8	pF	V _{CE} =-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

●Electrical characteristic curves

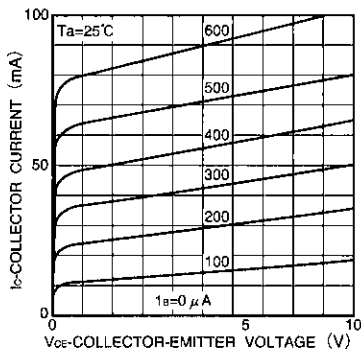


Fig.1 Grounded emitter output characteristics

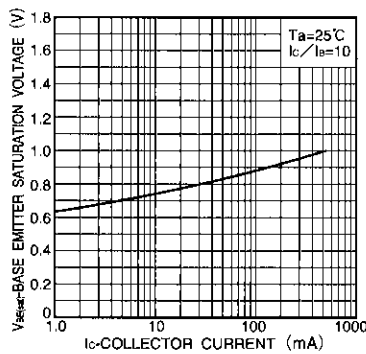


Fig.2 Base-emitter saturation voltage vs. collector current

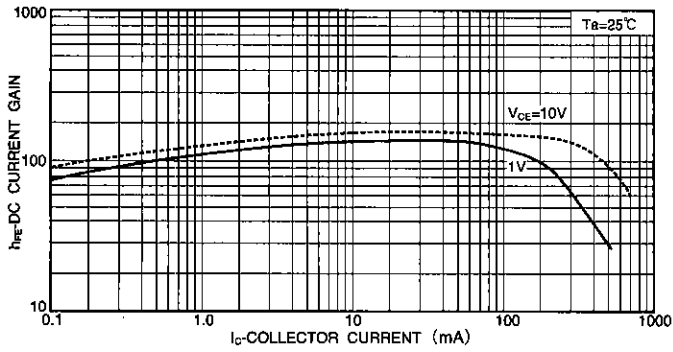


Fig.3 DC current gain vs. collector current (I)

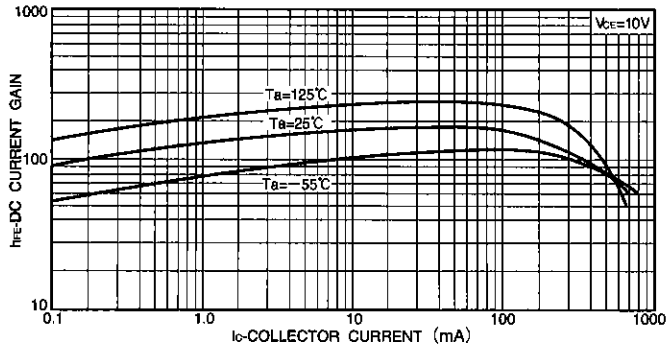


Fig.4 DC current gain vs. collector current (II)

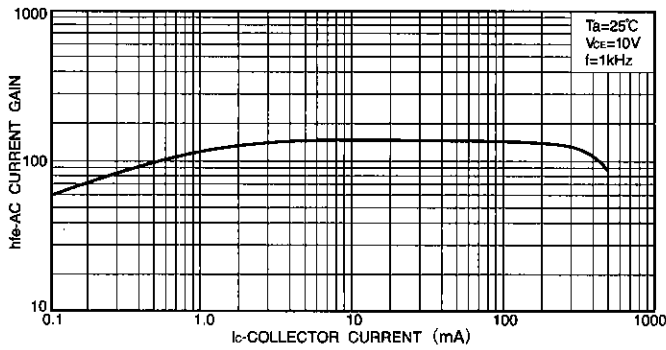


Fig.5 AC current gain vs. collector current

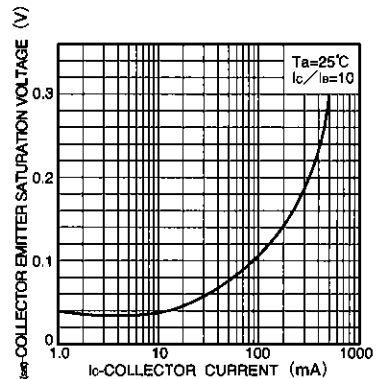


Fig.6 Collector-emitter saturation voltage vs. collector current



USA & European specification models

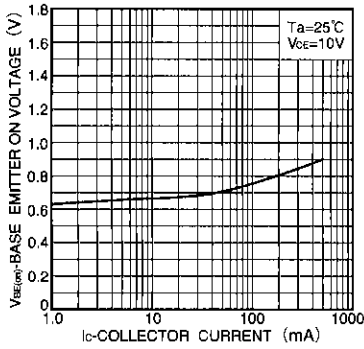


Fig.7 Grounded emitter propagation characteristics

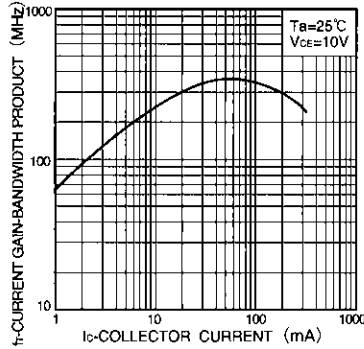


Fig.8 Gain bandwidth product vs. collector current

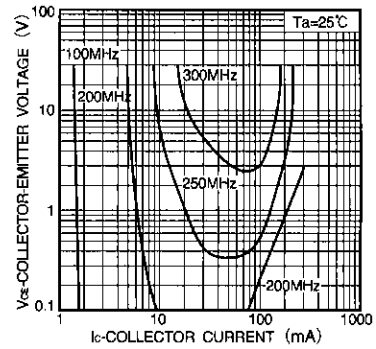


Fig.9 Gain bandwidth product

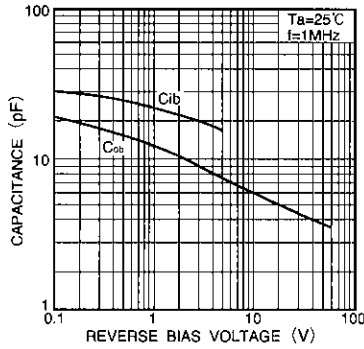


Fig.10 Input/output capacitance vs. voltage

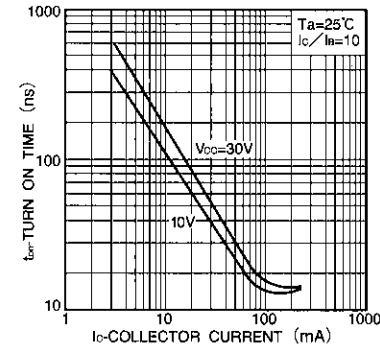


Fig.11 Turn-on time vs. collector current

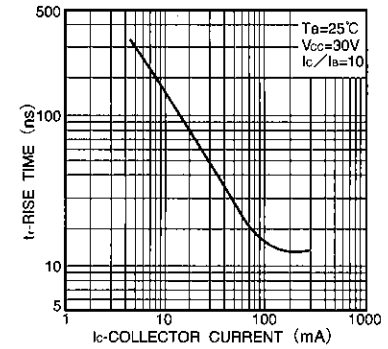


Fig.12 Rise time vs. collector current

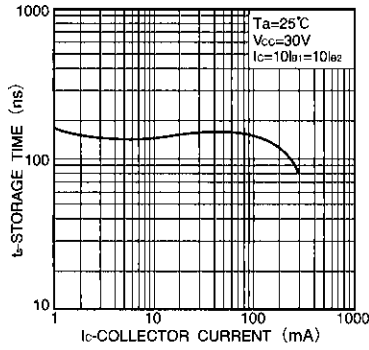


Fig.13 Storage time vs. collector current

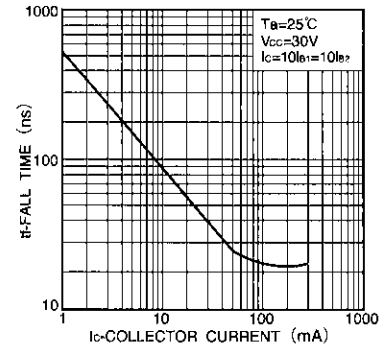


Fig.14 Fall time vs. collector current

Notes

- The contents described in this catalogue are correct as of March 1997.
- No unauthorized transmission or reproduction of this book, either in whole or in part, is permitted.
- The contents of this book are subject to change without notice. Always verify before use that the contents are the latest specifications. If, by any chance, a defect should arise in the equipment as a result of use without verification of the specifications, ROHM CO., LTD., can bear no responsibility whatsoever.
- Application circuit diagrams and circuit constants contained in this data book are shown as examples of standard use and operation. When designing for mass production, please pay careful attention to peripheral conditions.
- Any and all data, including, but not limited to application circuit diagrams, information, and various data, described in this catalogue are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO., LTD., disclaims any warranty that any use of such device shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes absolutely no liability in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices; other than for the buyer's right to use such devices itself, resell or otherwise dispose of the same; no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by ROHM CO., LTD., is granted to any such buyer.

The products listed in this catalogue are designed to be used with ordinary electronic equipment or devices (such as audio-visual equipment, office-automation equipment, communications devices, electrical appliances, and electronic toys). Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers, or other safety devices) please be sure to consult with our sales representatives in advance.

- Notes when exporting
 - It is essential to obtain export permission when exporting any of the above products when it falls under the category of strategic material (or labor) as determined by foreign exchange or foreign trade control laws.
 - Please be sure to consult with our sales representatives to ascertain whether any product is classified as a strategic material.