NPN High Frequency Transistor

MMST918 / PN918

●Features

1) High current gain-bandwidth product fT=600MHz

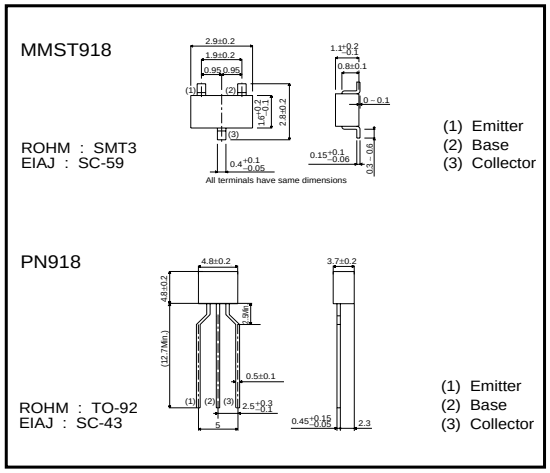
●Package, marking, and packaging specifications

Part No.	MMST918	PN918
Packaging type	SMT3	TO-92
Marking	RVX	–
Code	T146	T93
Basic ordering unit (pieces)	3000	3000

●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	30	V
Collector-emitter voltage		V_{CEO}	15	V
Emitter-base voltage		V_{EBO}	3	V
Collector current		I_C	50	A
Collector power dissipation	MMST918	P_C	0.2	W
	PN918		0.310	W
Junction temperature		Tj	150	°C
Storage temperature		Tstg	−55 to +150	°C

●External dimensions (Unit : mm)



●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	–	–	V	I_C=1.0μA
Collector-emitter breakdown voltage	BV_{CEO}	15	–	–	V	I_C=3.0mA
Emitter-base breakdown voltage	BV_{EBO}	3.0	–	–	V	I_E=10μA
Collector cutoff current	I_{CBO}	–	–	0.01	μA	V_{CB}=15V
		–	–	1.0	μA	V_{CB}=15V , I_E=0 , Ta=150°C
DC current transfer ratio	h_{FE}	20	–	–	–	I_C=3.0mA , V_{CE}=1.0V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	0.4	V	I_C/I_B=10mA/1mA
Base-emitter saturation voltage	$V_{BE(sat)}$	–	–	1.0	V	I_C/I_B=10mA/1mA
Transition frequency	f_T	600	–	–	MHz	I_C=4.0mA , V_{CE}=10V, f=100MHz
Output capacitance	Cob	–	–	1.7	pF	V_{CB}=10V , I_E=0 , f=140kHz
		–	–	3.0	pF	V_{CB}=0 , I_E=0 , f=140kHz
Emitter input capacitance	Cib	–	–	2.0	pF	V_{EB}=0.5V , I_C=0 , f=140kHz
Noise figure	NF	–	–	6.0	dB	I_C=1.0mA , V_{CE}=6.0V ,RG=400Ω , f=60MHz
Power gain	Gpe	15	–	–	dB	V_{CB}=12V , I_C=6.0mA , f=200MHz
Output power	Pout	30	–	–	mW	V_{CB}=15V , I_C=8.0mA , f=500MHz
Collector efficiency	η	25	–	–	%	V_{CB}=15V , I_C=8.0mA , f=500MHz

●Electrical characteristic curves

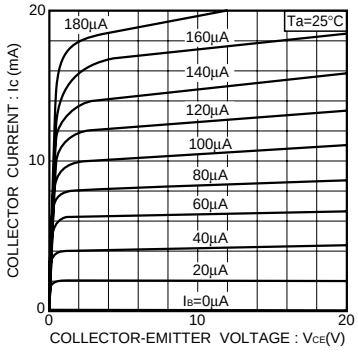


Fig.1 Typical output characteristics

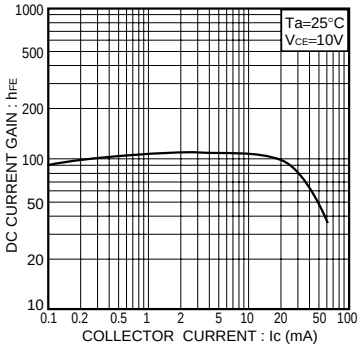


Fig.2 DC current gain vs. collector current

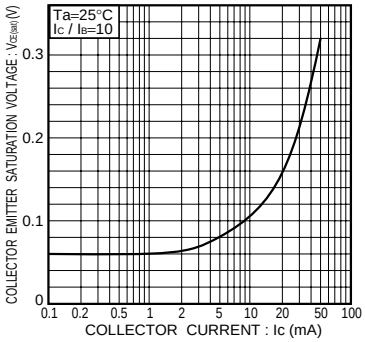


Fig.3 Collector-emitter saturation voltage vs. collector current

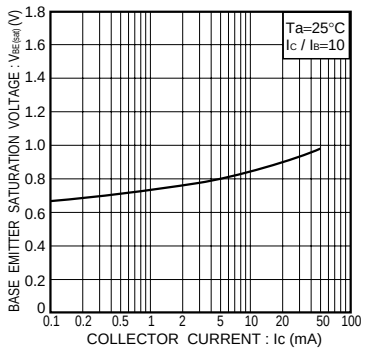


Fig.4 Base-emitter saturation voltage vs. collector current

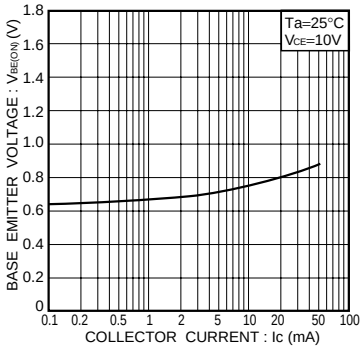


Fig.5 Base-emitter 'ON' voltage vs. collector current

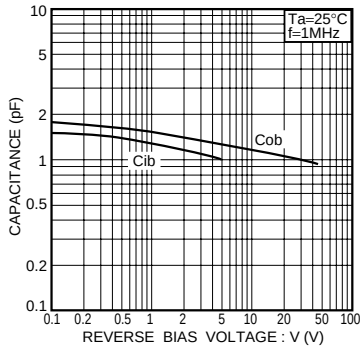


Fig.6 Capacitance vs. reverse bias voltage

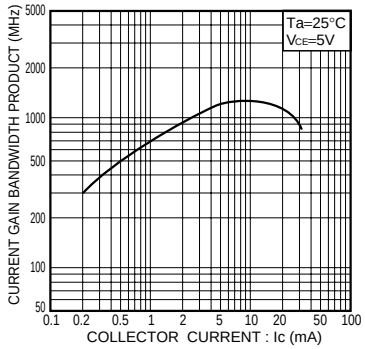


Fig.7 Current gain bandwidth product vs. collector current

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