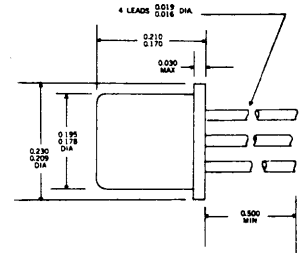
Kmc semiconductor corporation

2N3570
2N3571
2N3572

TRANSISTOR SPECIFICATIONS

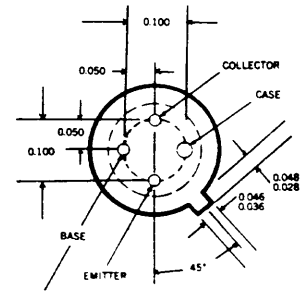
GENERAL DESCRIPTION:

The KMC 2N3570, 2N3571 and 2N3572 are NPN Silicon Transistors especially designed for UHF amplifiers, oscillators and mixers. Featuring low noise figure and high gain-bandwidth product, these devices are packaged in a TO-72 outline.



absolute maximum ratings at 25°C free-air temperature (unless otherwise noted)

	2N3570	2N3571	2N3572
Collector-Base Voltage	30 v	25 v	25 v
Collector-Emitter Voltage (See Note 1)	15 v	15 v	13 v
Emitter-Base Voltage	3 v	3v	3 v
Collector Current	←	50 ma	→
Continuous Device Dissipation at (or below) 25°C Free-Air Temperature (See Note 2)	←	200 mw	→
Continuous Device Dissipation at (or below) 25°C Case Temperature (See Note 3)	←	350 mw	→
Storage Temperature Range		−65°C to +200°C	
Lead Temperature 1/16 Inch from Case for 10 Seconds	←	300°C	→



All elements isolated from case . . . fourth lead grounded to case

NOTES:
1. This value applies when the base-emitter diode is open-circuited.
2. Derate linearly to 200°C free-air temperature at the rate of 1.14 mw/C°.
3. Derate linearly to 200°C case temperature at the rate of 2 mw/C°.
4. This parameter must be measured using pulse techniques. PW = 300 μsec, Duty Cycle ≤ 2%.
5. C_{cb} is measured using three-terminal measurement techniques with case and emitter guarded.
6. 100% tested for noise figure.

electrical characteristics at 25°C free-air temperature (unless otherwise noted)

PARAMETER		TEST CONDITIONS†	2N3570			2N3571		2N3572		
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	UNIT
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 1\ \mu a,\ I_E = 0$	30			25		25		v
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 2$ ma, $I_B = 0$, See Note 4	15			15		13		v
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 10\ \mu a,\ I_C = 0$	3			3		3		v
I_{CBO}	Collector Cutoff Current	$V_{CB} = 6$ v, $I_E = 0$			10		10		10	na
		$V_{CB} = 6$ v, $I_E = 0$, $T_A = 150°C$			1		1		1	μa
h_{FE}	Static Forward Current Transfer Ratio	$V_{CE} = 6$ v, $I_C = 5$ ma	20		150	20	200	20	300	
h_{fe}	Small-Signal Common-Emitter Forward Current Transfer Ratio	$V_{CE} = 6$ v, $I_C = 5$ ma, $f = 1$ kc	20		200	20	250	20	350	
h_{fe}	Smill-Signal Common-Emitter Forward Current Transfer Ratio	$V_{CE} = 6$ v, $I_C = 5$ ma, $f = 400$ Mc	3.75	4.25	6	3	6	2.5	6	
C_{cb}	Collector-Base Capacitance	$V_{CB} = 6$ v, $I_E = 0$, $f = 1$ Mc, See Note 5		0.60	0.75		0.85		0.85	pf
$r_b C_c$	Collector-Base Time Constant	$V_{CB} = 6$v, $I_E = -5$ ma, $f = 79.8$ Mc	1	5	8	1	10	1	13	psec
NF	Noise Figure See Note 6	$V_{CE} = 6$V, $f = 450$ Mc, $I_C = 2$ ma, $R_G = 100$ ohms					4		6	db
NF	Noise Figure See Note 6	$V_{CE} = 6$V, $f = 1$ Gc, $I_C = 2$ ma, $R_G = 50$ ohms			7					db

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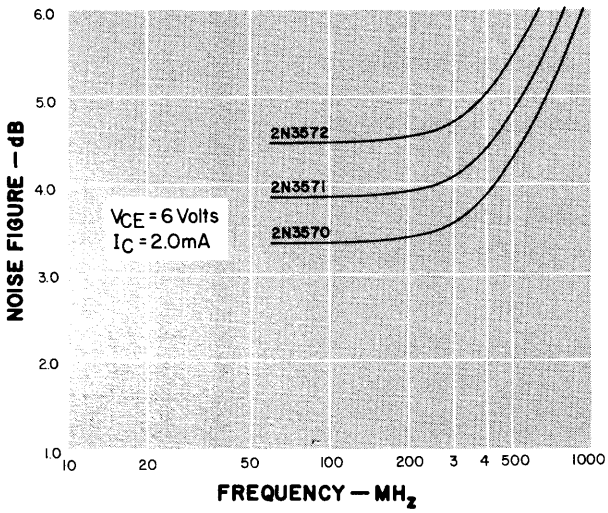
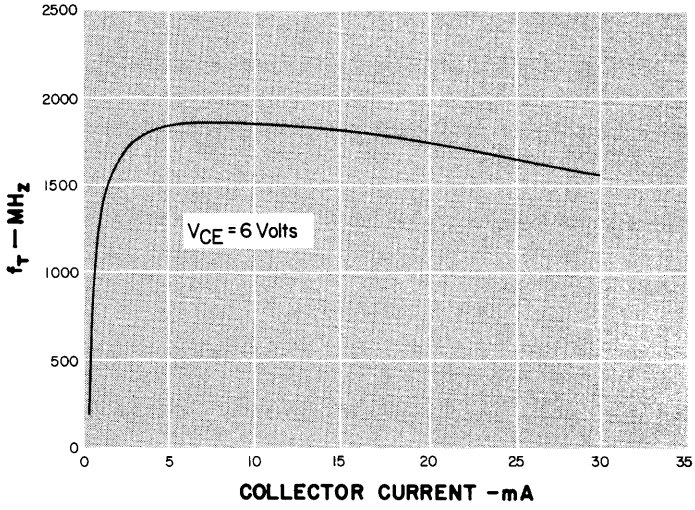
TYPICAL PERFORMANCE CURVES
AT 25°C

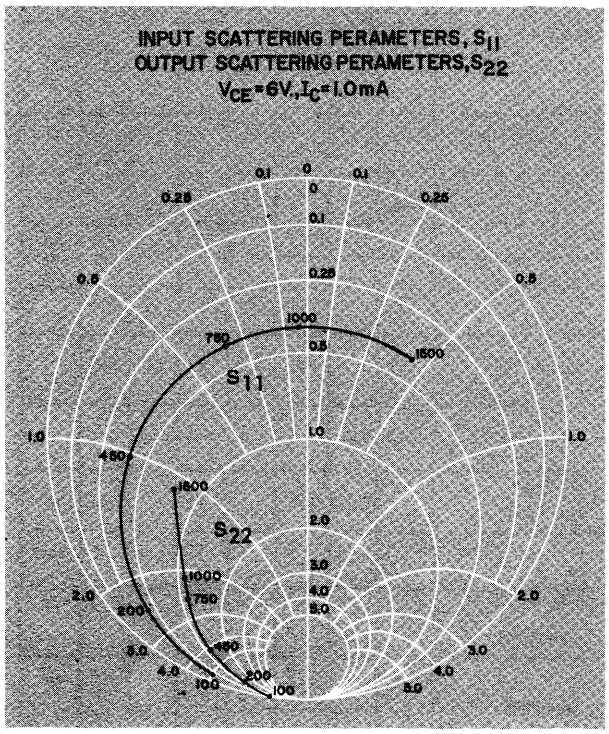
NOISE FIGURE VS FREQUENCY

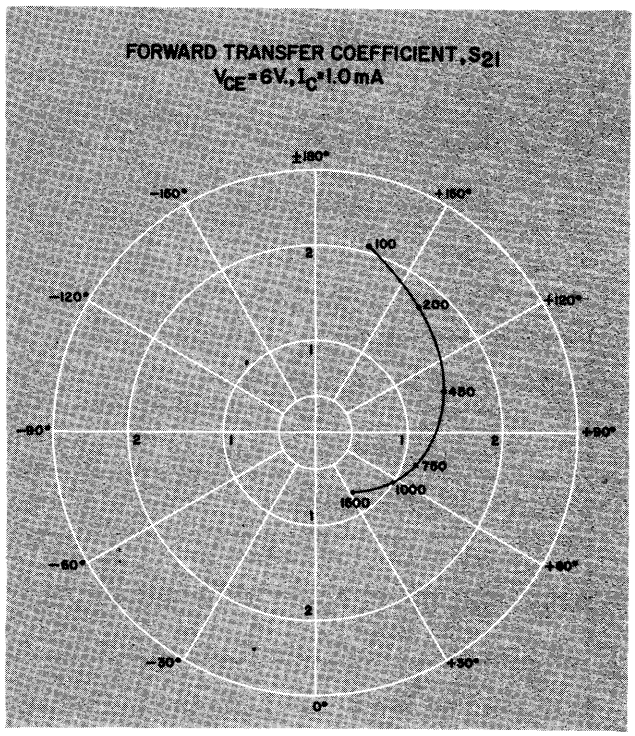


GAIN-BANDWIDTH VS COLLECTOR CURRENT



TYPICAL SCATTERING PARAMETERS





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Kmc semiconductor corporation

2N3683

TRANSISTOR SPECIFICATIONS

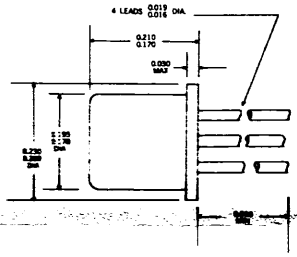
FEATURES:

- N.F. – 4.5 dB Max. at 450 MHz
- Ft – 1000 MHz
- Gpe – 12.5 dB Min. gain at 450 MHz

GENERAL DESCRIPTION:

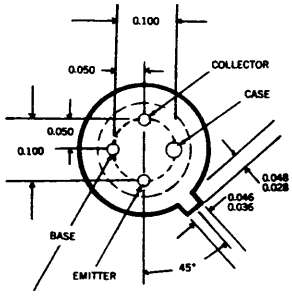
The KMC 2N3683 is a double-diffused, NPN Silicon transistor designed for low-level, low noise UHF amplifier applications. Exceptional performance in Converter and Oscillator circuitry in the UHF range is also a feature of this device.

A TO-72 package having a fourth lead connected to the case for grounding and shielding purposes is used. All active elements are isolated from the case.

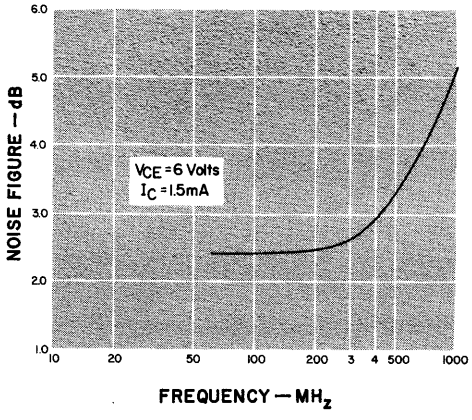


ABSOLUTE MAXIMUM RATINGS:

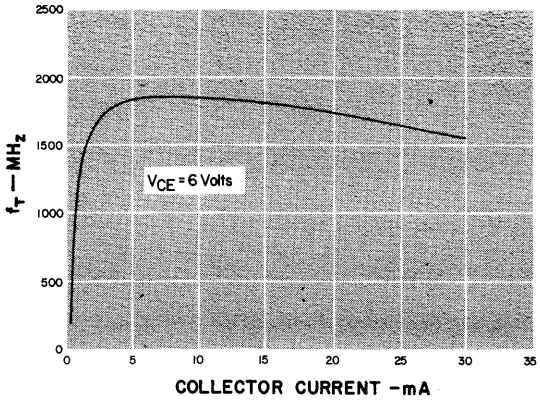
Collector to Base Voltage, V_{cbo}	30 volts
Collector to Emitter Voltage, V_{ceo}	15 volts
Emitter to Base Voltage, V_{cbo}	2.5 volts
Collector Current, I_c	30 mA
Dissipation at 25°C Ambient temperature	200 mw.
Operating junction temperature	200 °C
Storage junction temperature	−65 to +200 °C



NOISE FIGURE VS FREQUENCY



GAIN-BANDWIDTH VS COLLECTOR CURRENT



All elements isolated from case . . . fourth lead grounded to case.

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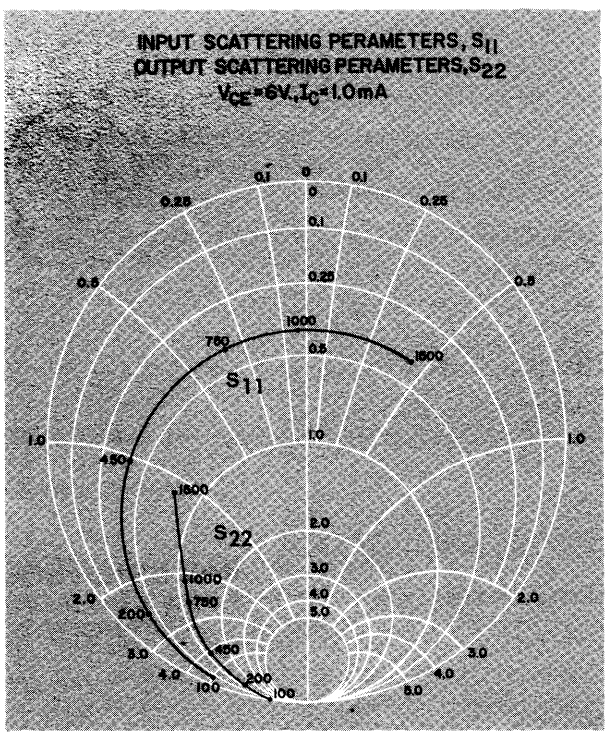
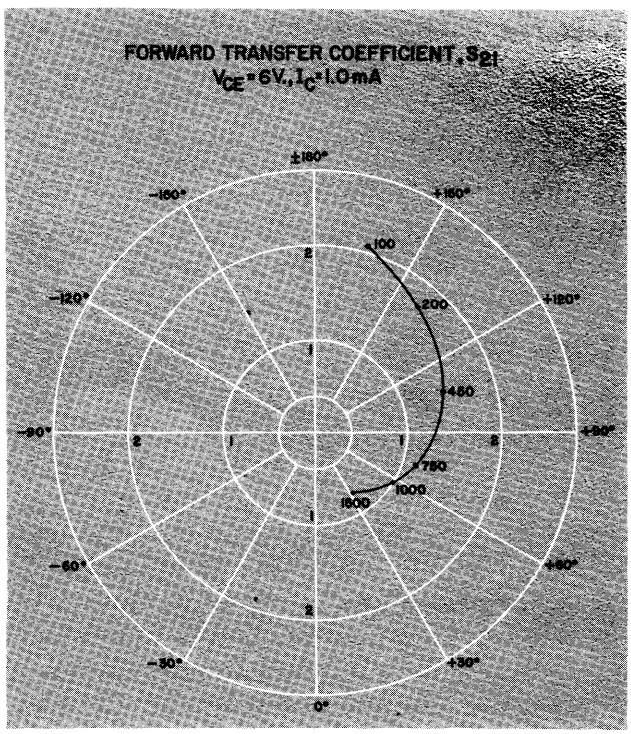
2N3683

ELECTRICAL PARAMETERS AT 25°c

SYMBOL	PARAMETER	TEST CONDITIONS	MIN.	MAX.	UNITS
BV_{CBO}	collector-base breakdown	I_C = 100μa	30	–	volts
BV_{EBO}	emitter-base breakdown	I_E = 100μa	2.0	–	volts
I_{CBO}	collector cutoff current	V_{CB} = 15 volts	–	.05	μa
h_{FE}	current transfer ratio	I_C = 3 mA, V_{CE} = 1 v	20	300	–
Ft	100 MHz current transfer ratio	I_C = 5 mA, V_{CE} = 6 v	1000	–	MHz
C_{cb}	Output capacitance guarded measurement	V_{CB} = 10 volts	–	1.0	pf
G_{pe}	small signal power gain	f = 450 MHz V_{CE} = 6 v I_C = 1.5 mA	12.5	–	dB
NF	Noise figure	I_C = 1.5 mA V_{CE} = 6 v f = 450 MHz	–	4.5	dB
NF	Noise figure	I_C = 1.5 mA, V_{CE} = 10 v f = 200 MHz		3.0	dB
G_{pe}	Small signal power gain	I_C = 1.5 mA, V_{CE} = 10 v f = 200 MHz	15	–	dB





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