



CHENMKO ENTERPRISE CO.,LTD

CHEMZ1PT

**SURFACE MOUNT
Dual Silicon Transistor**

VOLTAGE 50 Volts CURRENT 150 mAmpere

Lead free devices

APPLICATION

- * Small Signal Amplifier .

FEATURE

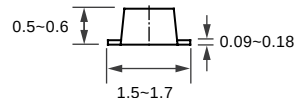
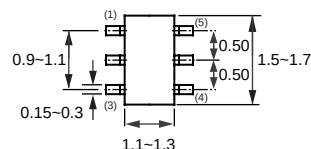
- * Small surface mounting type. (SOT-563)
- * Low saturation voltage $V_{CE(sat)}=0.5V(max.)$ ($I_C=50mA$)
- * Low cob. $C_{ob}=4.0pF(Typ.)$
- * $P_C=150mW$ (Total),120mW per element must not be exceeded.
- * High saturation current capability.
- * Both the 2SC2412K & 2SA1037K in one package.
- * NPN / PNP Silicon Transistor

MARKING

- * Z1



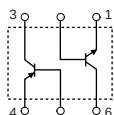
SOT-563



Dimensions in millimeters

SOT-563

CIRCUIT



2SC2412K LIMITING VALUES

MAXIMUM RATINGS (At $T_A = 25^{\circ}C$ unless otherwise noted)

RATINGS	CONDITION	SYMBOL	MIN.	MAX.	UNITS
Collector - Base Voltage	Open Emitter	V_{CB0}	-	60	Volts
Collector - Emitter Voltage	Open Base	V_{CE0}	-	50	Volts
Emitter - Base Voltage	Open Collector	V_{EB0}	-	7	Volts
Collector Current DC		I_C	-	150	mAmps
Peak Collector Current		I_{CM}	-	150	mAmps
Peak Base Current		I_{BM}	-	15	mAmps
Total Power Dissipation	$T_A \leq 25^{\circ}C$; Note 1	P_{TOT}	-	150	mW
Storage Temperature		T_{STG}	-55	+150	$^{\circ}C$
Junction Temperature		T_J	-	+150	$^{\circ}C$
Operating Ambient Temperature		T_{AMB}	-55	+150	$^{\circ}C$

Note

1. Transistor mounted on ceramic substrate 50mmX50mmX0.8t.
2. Measured at Pulse Width 300 us, Duty Cycle 2%.

2004-07

2SA1037K LIMITING VALUES

MAXIMUM RATINGS (At TA = 25 °C unless otherwise noted)

RATINGS	CONDITION	SYMBOL	MIN.	MAX.	UNITS
Collector - Base Voltage	Open Emitter	VCBO	-	-60	Volts
Collector - Emitter Voltage	Open Base	VCEO	-	-50	Volts
Emitter - Base Voltage	Open Collector	VEBO	-	-6	Volts
Collector Current DC		IC	-	-150	mAmps
Peak Collector Current		ICM	-	-150	mAmps
Peak Base Current		IBM	-	-15	mAmps
Total Power Dissipation	TA ≤ 25°C; Note 1	PTOT	-	150	mW
Storage Temperature		TSTG	-55	+150	°C
Junction Temperature		TJ	-	+150	°C
Operating Ambient Temperature		TAMB	-55	+150	°C

Note

1. Transistor mounted on ceramic substrate 50mmX50mmX0.8t.
2. Measured at Pulse Width 300 us, Duty Cycle 2%.

2SC2412K CHARACTERISTICS

ELECTRICAL CHARACTERISTICS (At TA = 25°C unless otherwise noted)

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Collector-base breakdown voltage	IC=50uA	BVCBO	60	-	-	Volts
Collector-emitter breakdown voltage	IC=1mA	BVCEO	50	-	-	Volts
Emitter-base breakdown voltage	IE=50uA	BVEBO	7	-	-	Volts
Collector Cut-off Current	IE=0; VCB=60V	ICBO	-	-	0.1	uA
Emitter Cut-off Current	IC=0; VEB=7V	ICEO	-	-	0.1	uA
DC Current Gain	VCE=6V IC=1mA	hFE	120	-	560	
Collector-Emitter Saturation Voltage	IC=50mA; IB=5mA	VCEsat	-	-	0.4	Volts
Output Collector Capacitance	IE=IE=0; VCB=12V; f=1MHz	Cob	-	2	3.5	pF
Transition Frequency	IC=2mA; VCE=12V; f=100MHz	fr	-	180	-	MHz

2SA1037K CHARACTERISTICS

ELECTRICAL CHARACTERISTICS (At TA = 25°C unless otherwise noted)

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Collector-base breakdown voltage	IC=-50uA	BVCBO	-60	-	-	Volts
Collector-emitter breakdown voltage	IC=-1mA	BVCEO	-50	-	-	Volts
Emitter-base breakdown voltage	IE=-50uA	BVEBO	-6	-	-	Volts
Collector Cut-off Current	IE=0; VCB=-60V	ICBO	-	-	-0.1	uA
Emitter Cut-off Current	IC=0; VEB=-6V	IEBO	-	-	-0.1	uA
DC Current Gain	VCE=-6V IC=-1mA	hFE	120	-	560	
Collector-Emitter Saturation Voltage	IC=-50mA; IB=-5mA	VCEsat	-	-	-0.5	Volts
Output Collector Capacitance	IE=IE=0; VCB=-12V; f=1MHz	Cob	-	4	5.0	pF
Transition Frequency	IE=2mA; VCE=-12V; f=100MHz	fr	-	140	-	MHz

RATING CHARACTERISTIC CURVES (CHEMZ1PT)

2SC2412K Typical Electrical Characteristics

Fig.1 Grounded emitter propagation characteristics

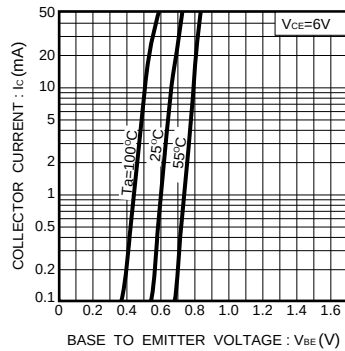


Fig.2 Grounded emitter output characteristics

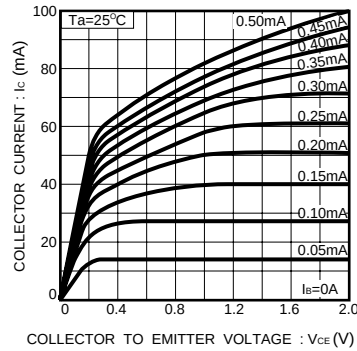


Fig.3 DC current gain vs. collector current (1)

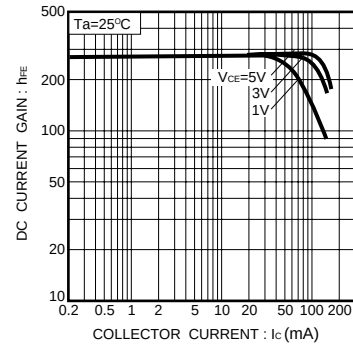


Fig.4 DC current gain vs. collector current (2)

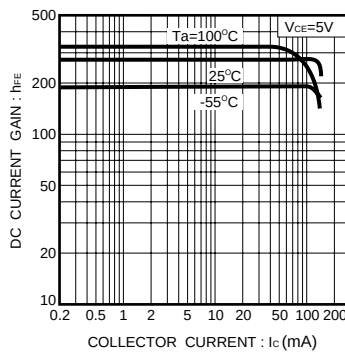


Fig.5 Collector-emitter saturation voltage vs. collector current

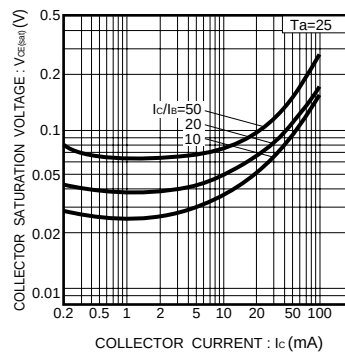


Fig.6 Collector-emitter saturation voltage vs. collector current

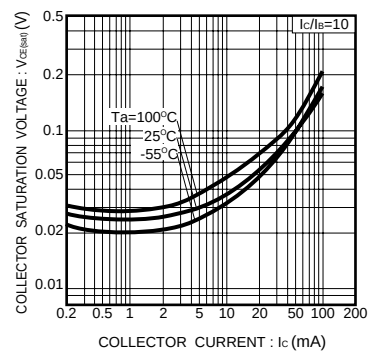


Fig.7 Gain bandwidth product vs. emitter current

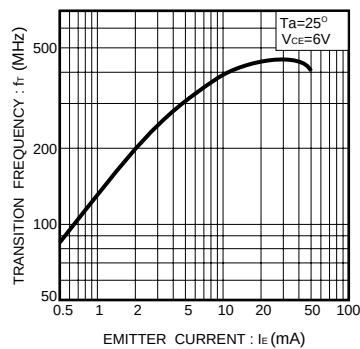
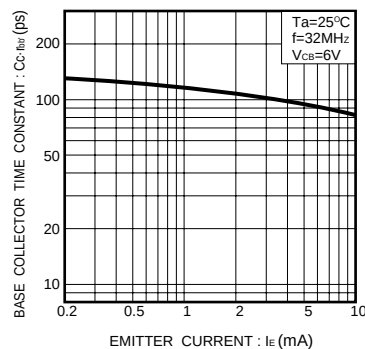


Fig.8 Base-collector time constant vs. emitter current



RATING CHARACTERISTIC CURVES (CHEMZ1PT)

2SA1037K Typical Electrical Characteristics

Fig.1 Grounded emitter propagation characteristics

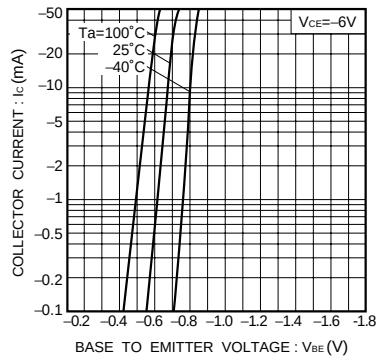


Fig.2 Grounded emitter output characteristics

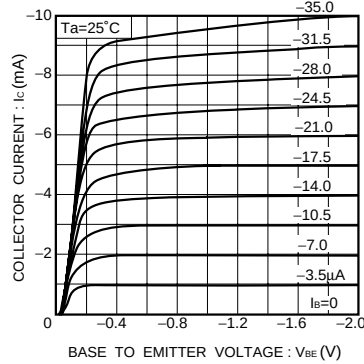


Fig.3 DC current gain vs. collector current (1)

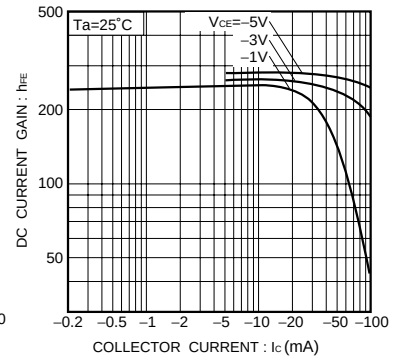


Fig.4 DC current gain vs. collector current (2)

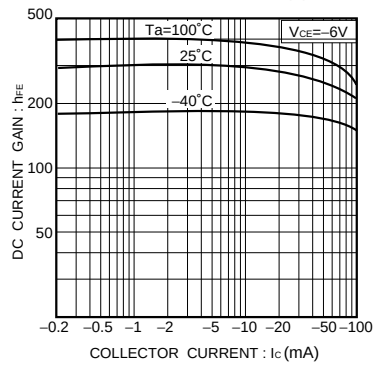


Fig.5 Collector-emitter saturation voltage vs. collector current

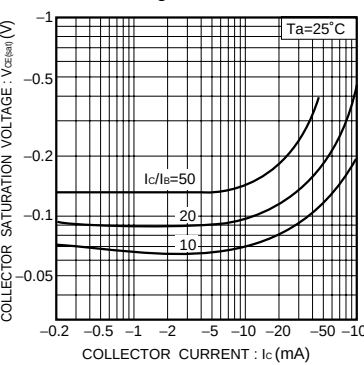


Fig.6 Collector-emitter saturation voltage vs. collector current

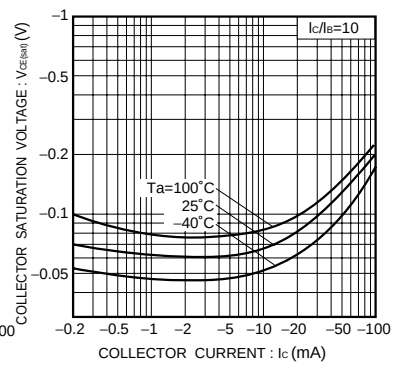


Fig.7 Gain bandwidth product vs. emitter current

