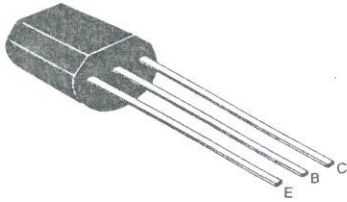


# TRANSISTOR 三極管(SOUTH KOREA SEMICONDUCTOR)

SK8050



TO-92

## 2W OUTPUT AMPLIFIER OF PORTABLE RADIOS IN CLASS B PUSH-PULL OPERATION

- Complementary to SK8550
- Collector Current  $I_c=1.5A$
- Collector Dissipation  $P_c=2W$  ( $P_c=25^\circ C$ )

### CLASSIFICATION $h_{FE}$ (2)

Classification	B	C	D
$h_{FE}$ (2)	85-160	120-200	160-300

### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ C$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	40	V
Collector-Emitter Voltage	$V_{CE0}$	25	V
Emitter-Base Voltage	$V_{EB0}$	6	V
Collector Current	$I_c$	1.5	A

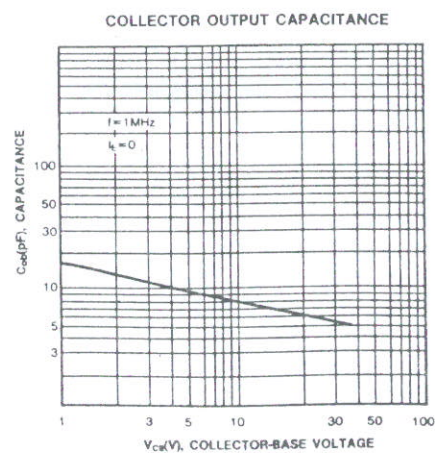
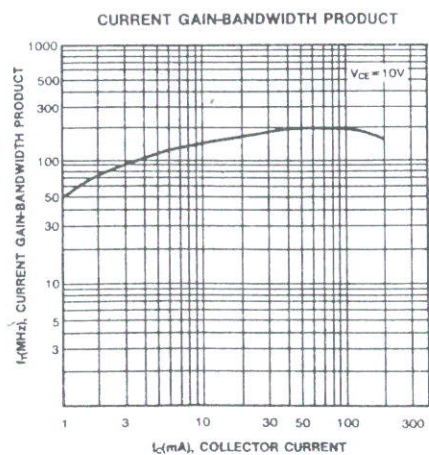
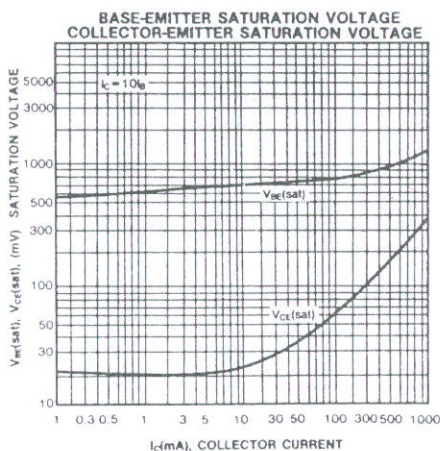
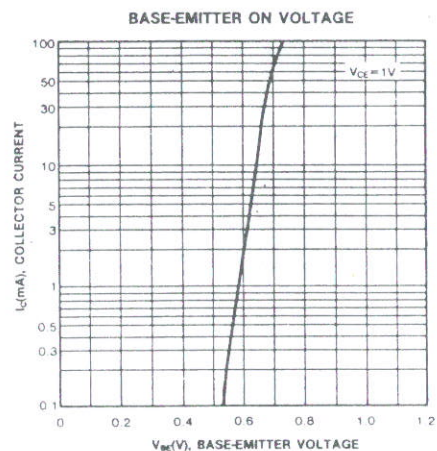
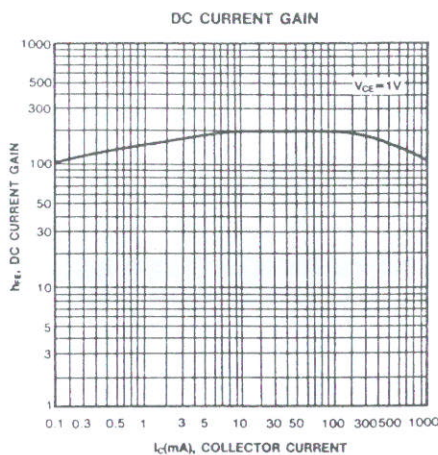
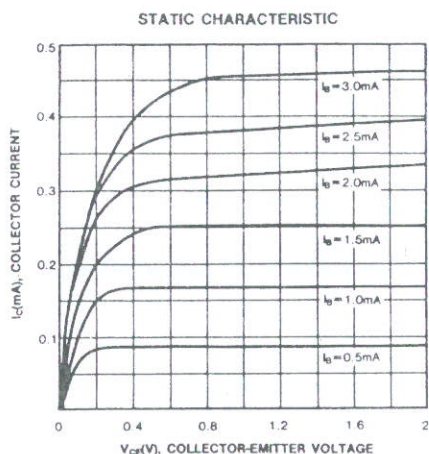
Characteristic	Symbol	Rating	Unit
Collector Dissipation	$P_c$	1	W
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-65~150	$^\circ C$

### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	$BV_{CB0}$	40			V	$I_c=100\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	25			V	$I_c=2mA, I_B=0$
Emitter-Base Breakdown Voltage	$BV_{EB0}$	6			V	$I_E=100\mu A, I_C=0$
Collector Cutoff Current	$I_{CB0}$			100	nA	$V_{CB}=35V, I_E=0$
Emitter Cutoff Current	$I_{EB0}$			100	nA	$V_{EB}=6V, I_C=0$
DC Current Gain	$h_{FE1}$	45	135			$V_{CE}=1V, I_c=5mA$
	$h_{FE2}$	85	160	300		$V_{CE}=1V, I_c=100mA$
	$h_{FE3}$	40	110			$V_{CE}=1V, I_c=800mA$
Collector-Emitter Saturation Voltage	$V_{CE}(sat)$		0.28	0.5	V	$I_c=800mA, I_B=80mA$
Base-Emitter Saturation Voltage	$V_{BE}(sat)$		0.98	1.2	V	$I_c=800mA, I_B=80mA$
Base-Emitter Voltage	$V_{BE}$		0.66	1	V	$V_{CE}=1V, I_c=10mA$
Output Capacitance	$C_{ob}$		9.0		pF	$V_{CB}=10V, I_E=0, f=1MHz$
Current Gain-Bandwidth Product	$f_T$	100	190		MHz	$V_{CE}=10V, I_c=50mA$

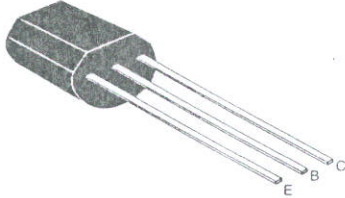
# TRANSISTOR 三極管 (SOUTH KOREA SEMICONDUCTOR)

SK8050



# TRANSISTOR 三極管(SOUTH KOREA SEMICONDUCTOR)

SK8550



TO-92

## 2W OUTPUT AMPLIFIER OF PORTABLE RADIOS IN CLASS B PUSH-PULL OPERATION

- Complimentary to SK8050
- Collector Current:  $I_c = -1.5A$
- Collector Dissipation:  $P_c = 2W$  ( $P_c = 25^\circ C$ )

### CLASSIFICATION $h_{FE}$ (2)

Classification	B	C	D
$h_{FE}$ (2)	85-160	120-200	160-300

### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-25	V
Emitter-Base Voltage	$V_{EBO}$	-6	V
Collector Current	$I_c$	-1.5	A

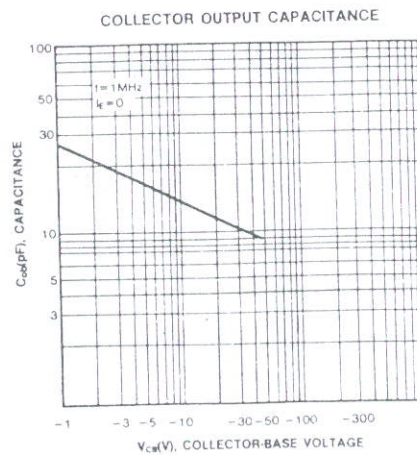
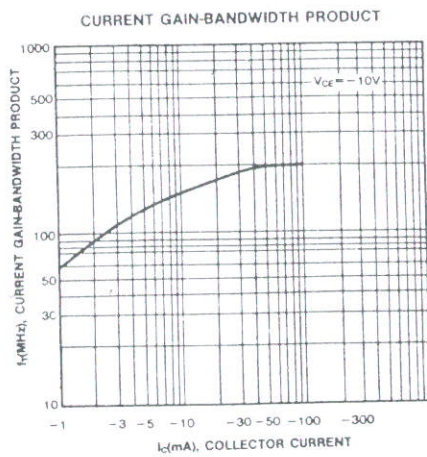
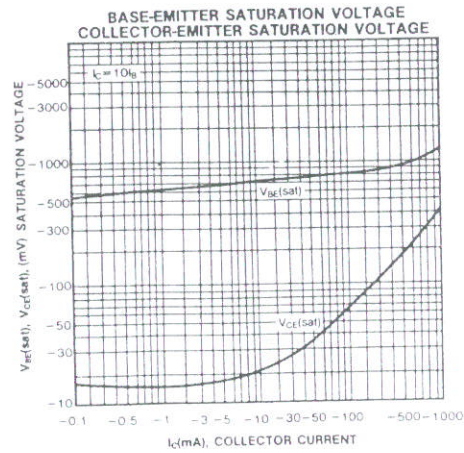
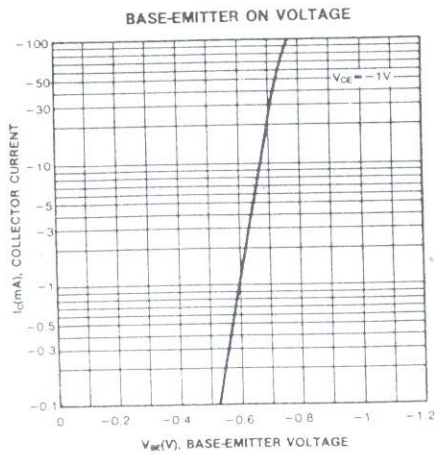
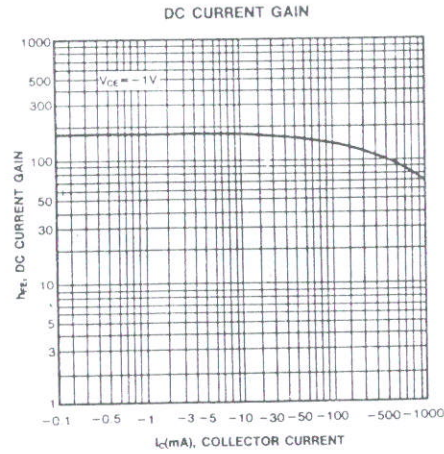
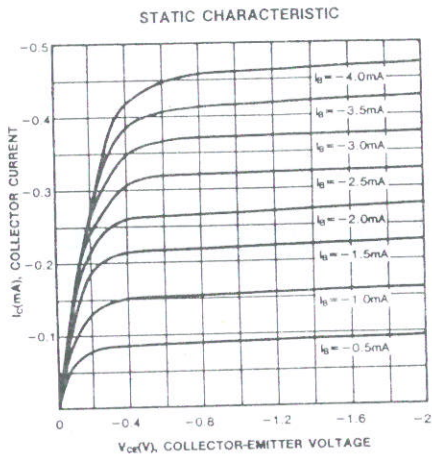
Characteristic	Symbol	Rating	Unit
Collector Dissipation	$P_c$	1	W
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-65~150	$^\circ C$

### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	$BV_{CBO}$	-40			V	$I_c = -100\mu A, I_b = 0$
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	-25			V	$I_c = -2mA, I_b = 0$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	-6			V	$I_E = -100\mu A, I_c = 0$
Collector Cutoff Current	$I_{CBO}$			-100	nA	$V_{CB} = -35V, I_E = 0$
Emitter Cutoff Current	$I_{EBO}$			-100	nA	$V_{EB} = -6V, I_c = 0$
DC Current Gain	$h_{FE1}$	45	170			$V_{CE} = -1V, I_c = -5mA$
	$h_{FE2}$	85	160	300		$V_{CE} = -1V, I_c = -100mA$
	$h_{FE3}$	40	80			$V_{CE} = -1V, I_c = -800mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-0.28	-0.5		V	$I_c = -800mA, I_b = -80mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-0.98	-1.2		V	$I_c = -800mA, I_b = -80mA$
Base-Emitter Voltage	$V_{BE}$	-0.66	-1.0		V	$V_{CE} = -1V, I_c = -10mA$
Output Capacitance	$C_{ob}$		15		pF	$V_{CB} = -10V, I_E = 0, f = 1MHz$
Current Gain-Bandwidth Product	$f_T$	100	200		MHz	$V_{CE} = -10V, I_c = -50mA$

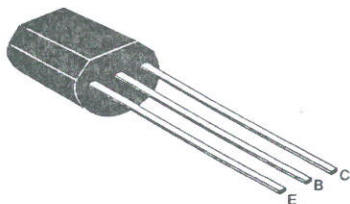
# TRANSISTOR 三極管(SOUTH KOREA SEMICONDUCTOR)

SK8550



# TRANSISTOR 三極管(SOUTH KOREA SEMICONDUCTOR)

SK9012



TO-92

## 1W OUTPUT AMPLIFIER OF POTABLE RADIOS IN CLASS B PUSH-PULL OPERATION.

- High total power dissipation. (PT=625mW)
- High Collector Current. ( $I_c=-500\text{mA}$ )
- Complementary to SK 9013
- Excellent  $h_{FE}$  linearity.

### CLASSIFICATION $h_{FE}$ (1)

Classification	D	E	F	G	H
$h_{FE}$ (1)	64-91	78-112	96-135	112-166	144-202

### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-20	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_c$	-500	mA
Collector Dissipation	$P_c$	625	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

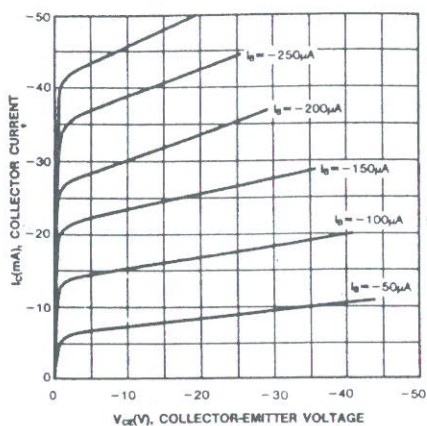
### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	$BV_{CBO}$	-40			V	$I_c=-100\mu\text{A}$ , $I_E=0$
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	-20			V	$I_c=-1\text{mA}$ , $I_B=0$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	-5			V	$I_E=-100\mu\text{A}$ , $I_C=0$
Collector Cutoff Current	$I_{CBO}$			-100	nA	$V_{CB}=-25\text{V}$ , $I_E=0$
Emitter Cutoff Current	$I_{EBO}$			-100	nA	$V_{EB}=-3\text{V}$ , $I_C=0$
DC Current Gain	$h_{FE1}$	64	120	202		$V_{CE}=-1\text{V}$ , $I_c=-50\text{mA}$
	$h_{FE2}$	40	90			$V_{CE}=-1\text{V}$ , $I_c=-500\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-0.18	-0.6	V	$I_c=-500\text{mA}$ , $I_B=-50\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-0.95	-1.2	V	$I_c=-500\text{mA}$ , $I_B=-50\text{mA}$
Base-Emitter On Voltage	$V_{BE(on)}$	-0.6	-0.67	-0.7	V	$V_{CE}=-1\text{V}$ , $I_c=-10\text{mA}$

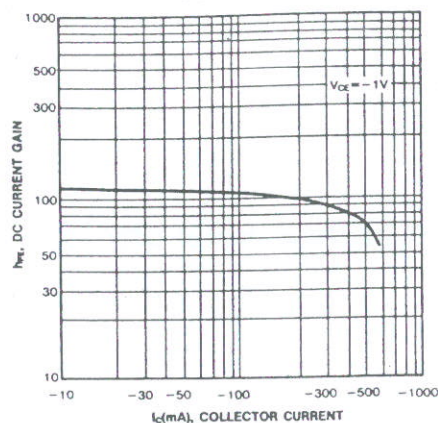
# TRANSISTOR 三極管 (SOUTH KOREA SEMICONDUCTOR)

SK9012

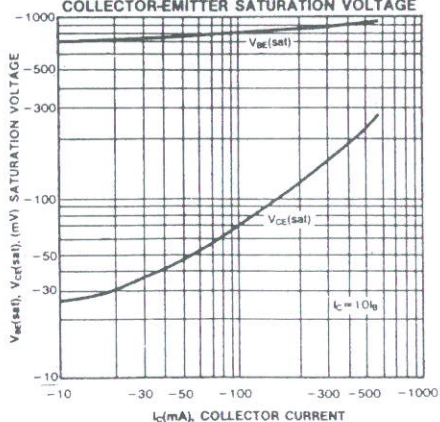
STATIC CHARACTERISTIC



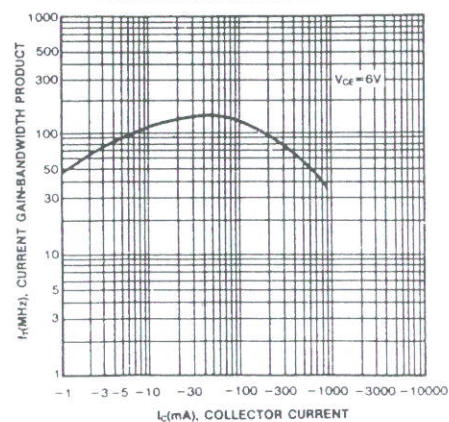
DC CURRENT GAIN



BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE

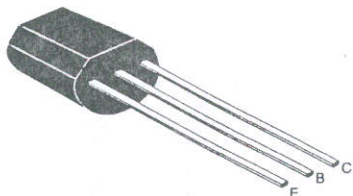


CURRENT GAIN-BANDWIDTH PRODUCT



# TRANSISTOR 三極管(SOUTH KOREA SEMICONDUCTOR)

SK9013



TO-92

## 1W OUTPUT AMPLIFIER OF PORTABLE RADIOS IN CLASS B PUSH-PULL OPERATION

- High total power dissipation. (PT=625mW)
- High Collector Current. ( $I_c=500\text{mA}$ )
- Complementary to SK9012
- Excellent  $h_{FE}$  linearity.

### CLASSIFICATION $h_{FE}$ (1)

Classification	D	E	F	G	H
$h_{FE}$ (1)	64-91	78-112	96-135	112-166	144-202

### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_c$	500	mA

Characteristic	Symbol	Rating	Unit
Collector Dissipation	$P_c$	625	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

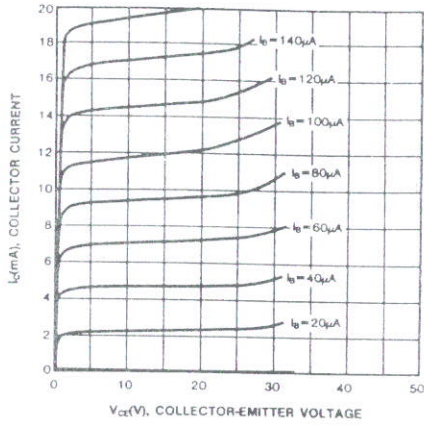
### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	$BV_{CBO}$	40			V	$I_c=100\mu\text{A}$ , $I_E=0$
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	20			V	$I_c=1\text{mA}$ , $I_B=0$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	5			V	$I_E=100\mu\text{A}$ , $I_c=0$
Collector Cutoff Current	$I_{CBO}$			100	nA	$V_{CB}=25\text{V}$ , $I_E=0$
Emitter Cutoff Current	$I_{EBO}$			100	nA	$V_{EB}=3\text{V}$ , $I_c=0$
DC Current Gain	$h_{FE1}$	64	120	202		$V_{CE}=1\text{V}$ , $I_c=50\text{mA}$
	$h_{FE2}$	40	120			$V_{CE}=1\text{V}$ , $I_c=500\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$		0.16	0.6	V	$I_c=500\text{mA}$ , $I_B=50\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE}(\text{sat})$		0.91	1.2	V	$I_c=500\text{mA}$ , $I_B=50\text{mA}$
Base-Emitter On Voltage	$V_{BE}(\text{on})$	0.6	0.67	0.7	V	$V_{CE}=1\text{V}$ , $I_c=10\text{mA}$

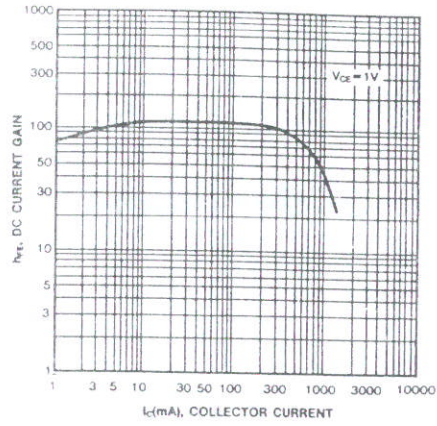
# TRANSISTOR 三極管(SOUTH KOREA SEMICONDUCTOR)

SK9013

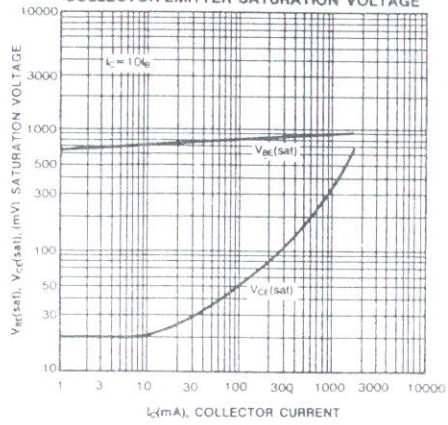
STATIC CHARACTERISTIC



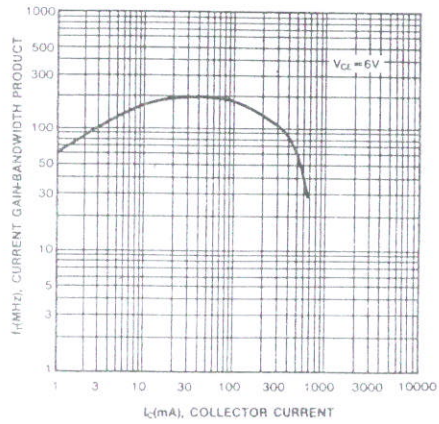
DC CURRENT GAIN



BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



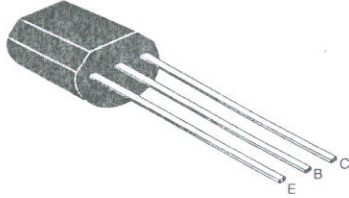
CURRENT GAIN-BANDWIDTH PRODUCT





# TRANSISTOR 三極管(SOUTH KOREA SEMICONDUCTOR)

SK9014



TO-92

## PRE-AMPLIFIER, LOW LEVEL & LOW NOISE

- High total power dissipation. (PT=450mW)
- High  $h_{FE}$  and good linearity.
- Complementary to SK9015

### CLASSIFICATION $h_{FE}$

Classification	A	B	C	D
$h_{FE}$	60-150	100-300	200-600	400-1000

### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	100	mA

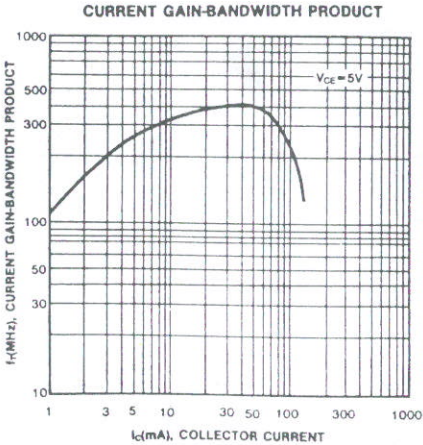
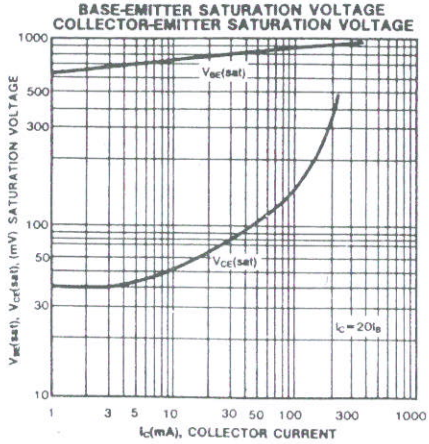
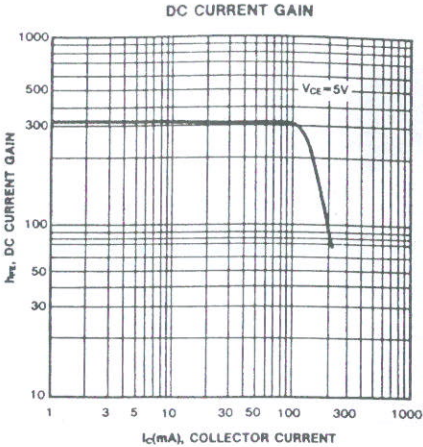
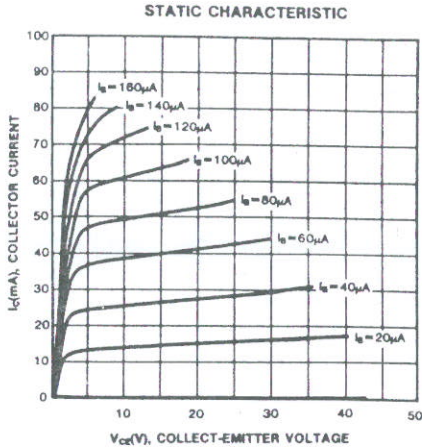
Characteristic	Symbol	Rating	Unit
Collector Dissipation	$P_C$	450	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	$BV_{CBO}$	50			V	$I_C=100\mu\text{A}$ , $I_E=0$
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	45			V	$I_C=1\text{mA}$ , $I_B=0$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	5			V	$I_E=100\mu\text{A}$ , $I_C=0$
Collector Cutoff Current	$I_{CBO}$			50	nA	$V_{CB}=50\text{V}$ , $I_E=0$
Emitter Cutoff Current	$I_{EBO}$			50	nA	$V_{EB}=5\text{V}$ , $I_C=0$
DC Current Gain	$h_{FE}$	60	280	1000		$V_{CE}=5\text{V}$ , $I_C=1\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$		0.14	0.3	V	$I_C=100\text{mA}$ , $I_B=5\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE}(\text{sat})$		0.84	1.0	V	$I_C=100\text{mA}$ , $I_B=5\text{mA}$
Base-Emitter On Voltage	$V_{BE}(\text{on})$	0.58	0.63	0.7	V	$V_{CE}=5\text{V}$ , $I_C=2\text{mA}$
Output Capacitance	$C_{ob}$		2.2	3.5	pF	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$
Current Gain-Bandwidth Product	$f_T$	150	270		MHz	$V_{CE}=5\text{V}$ , $I_C=10\text{mA}$
Noise Figure	NF		0.9	10	dB	$V_{CE}=5\text{V}$ , $I_C=0.2\text{mA}$ $f=1\text{KHz}$ , $R_s=2\text{K}\Omega$

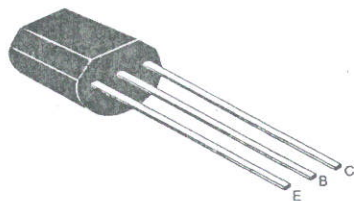
# TRANSISTOR 三極管(SOUTH KOREA SEMICONDUCTOR)

SK9014



# TRANSISTOR 三極管 (SOUTH KOREA SEMICONDUCTOR)

SK9015



TO-92

## LOW FREQUENCY, LOW NOISE AMPLIFIER

- Complimentary to SK9014

### CLASSIFICATION $h_{FE}$

Classification	A	B	C
$h_{FE}$	60-150	100-300	200-600

### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-50	V
Collector-Emitter Voltage	$V_{CEO}$	-45	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-100	mA

Characteristic	Symbol	Rating	Unit
Collector Dissipation	$P_C$	450	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

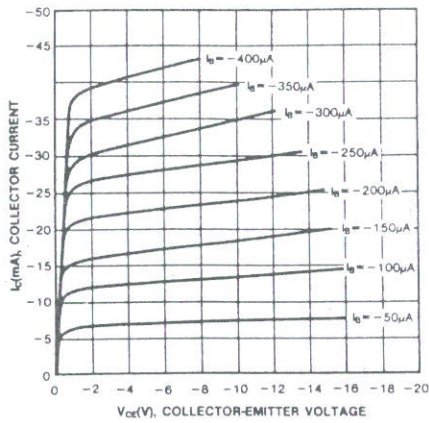
### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	$BV_{CBO}$	-50			V	$I_C=-100\mu\text{A}$ , $I_E=0$
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	-45			V	$I_C=-1\text{mA}$ , $I_B=0$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	-5			V	$I_E=-100\mu\text{A}$ , $I_C=0$
Collector Cutoff Current	$I_{CBO}$			-50	nA	$V_{CB}=-50\text{V}$ , $I_E=0$
Emitter Cutoff Current	$I_{EBO}$			-50	nA	$V_{EB}=-5\text{V}$ , $I_C=0$
DC Current Gain	$h_{FE}$	60	200	600		$V_{CE}=-5\text{V}$ , $I_C=-1\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$		-0.2	-0.7	V	$I_C=-100\text{mA}$ , $I_B=-5\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE}(\text{sat})$		-0.82	-1.0	V	$I_C=-100\text{mA}$ , $I_B=-5\text{mA}$
Base-Emitter On Voltage	$V_{BE}(\text{on})$	-0.6	-0.65	-0.75	V	$V_{CE}=-5\text{V}$ , $I_C=-2\text{mA}$
Output Capacitance	$C_{ob}$		4.5	7.0	pF	$V_{CB}=-10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$
Current Gain-Bandwidth Product	$f_T$	100	190		MHz	$V_{CE}=-5\text{V}$ , $I_C=-10\text{mA}$
Noise Figure	NF		0.7	10	dB	$V_{CE}=-5\text{V}$ , $I_C=-0.2\text{mA}$ $f=1\text{KHz}$ , $R_S=1\text{K}\Omega$

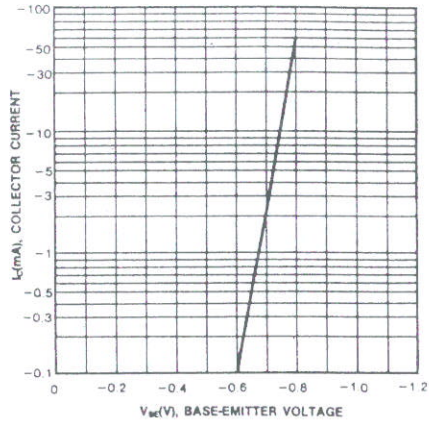
# TRANSISTOR 三極管(SOUTH KOREA SEMICONDUCTOR)

SK9015

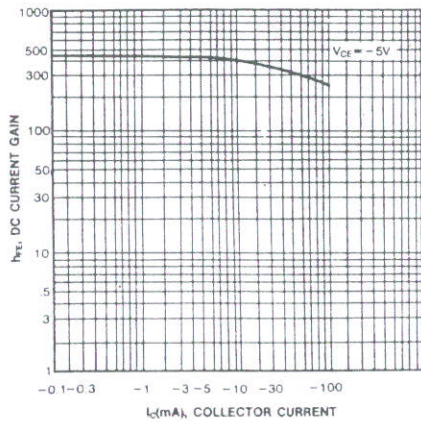
STATIC CHARACTERISTIC



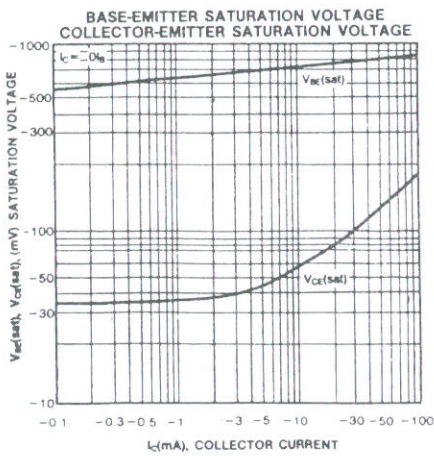
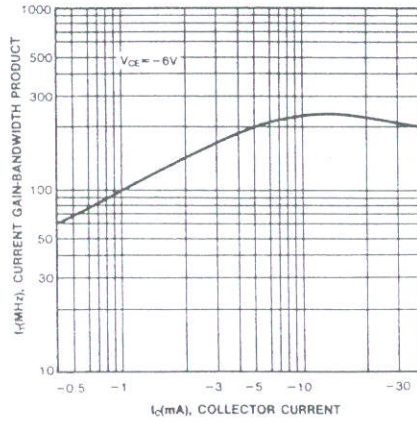
BASE-EMITTER ON VOLTAGE



DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT



COLLECTOR OUTPUT CAPACITANCE

