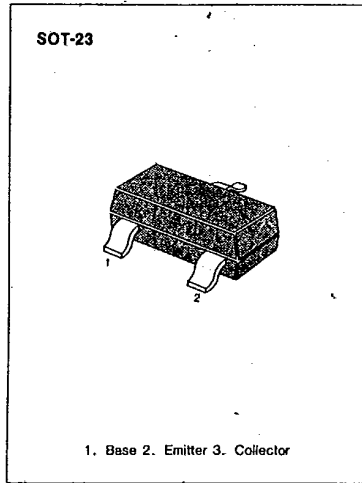


**KSR1106**

**NPN EPITAXIAL SILICON TRANSISTOR**

**SWITCHING APPLICATION (Bias Resistor Built In)**

- Switching Circuit, Inverter, Interface circuit Driver circuit
- Built in bias Resistor ( $R_1=10K\Omega$ ,  $R_2=47K\Omega$ )
- Complement to KSR2106



3

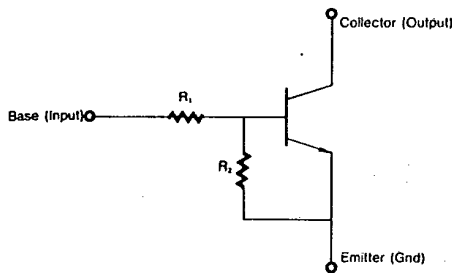
**ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	10	V
Collector Current	$I_C$	100	mA
Collector Dissipation	$P_C$	200	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 ~ 150	$^\circ\text{C}$

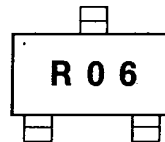
**ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )**

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=10\mu\text{A}$ , $I_E=0$	50			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=100\mu\text{A}$ , $I_B=0$	50			V
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=40\text{V}$ , $I_E=0$			0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}$ , $I_C=5\text{mA}$	68			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$ , $I_B=0.5\text{mA}$			0.3	V
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ , $I_E=0$ $f=1\text{MHz}$		3.7		pF
Current Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}$ , $I_C=5\text{mA}$		250		MHz
Input Off Voltage	$V_I(off)$	$V_{CE}=5\text{V}$ , $I_C=100\mu\text{A}$	0.3			V
Input On Voltage	$V_I(on)$	$V_{CE}=0.3\text{V}$ , $I_C=1\text{mA}$			1.4	V
Input Resistor	$R_1$		7	10	13	$K\Omega$
Resistor Ratio	$R_1/R_2$		0.19	0.21	0.24	

**Equivalent Circuit**



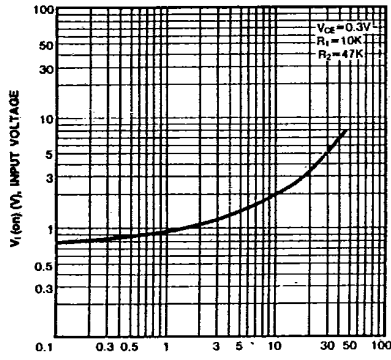
**Marking**



**KSR1106**

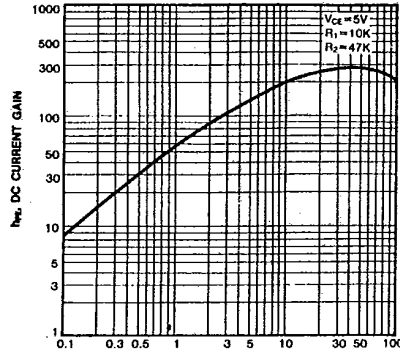
**NPN EPITAXIAL SILICON TRANSISTOR**

INPUT ON VOLTAGE



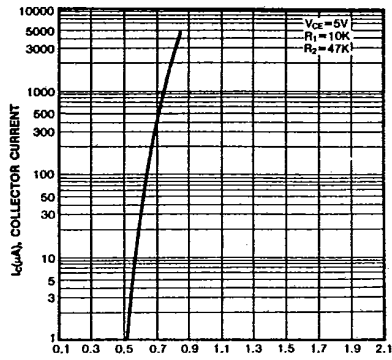
$I_c$  (mA), COLLECTOR CURRENT

DC CURRENT GAIN



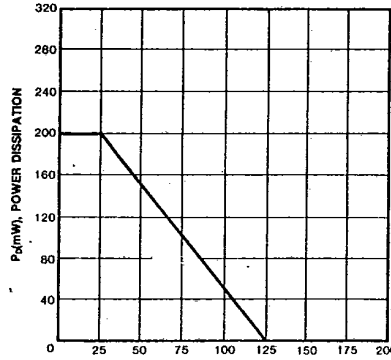
$I_c$  (mA), COLLECTOR CURRENT

INPUT OFF VOLTAGE



$V_i$  (OFF) (V), INPUT OFF VOLTAGE

POWER DERATING



$T_A$  (°C), AMBIENT TEMPERATURE

