

KSG13003AR



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Switch Mode series NPN silicon Power Transistor

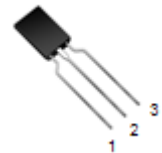
- High voltage, high speed power switching

Absolute Maximum Ratings $T_C=25^{\circ}\text{C}$ unless otherwise noted

1.5 Amperes
NPN Silicon Power Transistor
1.5 Watts

CHARACTERISTICS	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	700	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	9	V
Collector Current(DC)	I_C	1.5	A
Collector Current(Pulse)	I_{CP}	3	A
Base Current	I_B	0.75	A
Collector Dissipation($T_C=25^{\circ}\text{C}$)	P_C	1.5	W
Storage Temperature	T_{STG}	150	$^{\circ}\text{C}$
Max. Operating Junction Temperature	T_J	-65~150	$^{\circ}\text{C}$

TO-92L
1. Emitter
2. Collector
3. Base



Electrical Characteristics $T_C=25^{\circ}\text{C}$ unless otherwise noted

CHARACTERISTICS	SYMBOL	Test Condition	Min	Typ.	Max	Unit
Collector-Base Breakdown Voltage	V_{CBO}	$I_C=500\mu\text{A}, I_E=0$	700			V
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C=5\text{mA}, I_B=0$	400			V
Emitter Cut-off Current	I_{EBO}	$V_{EB}=9\text{V}, I_C=0$			10	μA
*DC Current Gain	h_{FE1} h_{FE2}	$V_{CE}=2\text{V}, I_C=0.5\text{A}$ $V_{CE}=2\text{V}, I_C=1\text{A}$	9 5		35	
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5\text{A}, I_B=0.1\text{A}$ $I_C=1\text{A}, I_B=0.25\text{A}$ $I_C=1.5\text{A}, I_B=0.5\text{A}$			0.5 1.0 3.0	V V V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.5\text{A}, I_B=0.1\text{A}$ $I_C=1\text{A}, I_B=0.25\text{A}$			1.0 1.2	V V
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=0.1\text{MHz}$		21		pF
Current Gain Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=0.1\text{A}$	4			MHz
Turn on Time	t_{on}	$V_{CC}=125\text{V}, I_C=2\text{A}$ $I_{B1}=0.2\text{A}, I_{B2}=-0.2\text{A}$ $R_L=125\Omega$			1.1	μs
Storage Time	t_{stg}				4.0	μs
Fall Time	t_F				0.7	μs

* Pulse Test: Pulse Widths $\leq 300\mu\text{s}$, Duty Cycles $\leq 2\%$

Note.

Package Mark information.

hFE1 Classification	R	9 ~ 16
	O	15 ~ 25
	Y	20 ~ 30

S AR 13003 YWW Z	R	Pin type (ECB)
	YWW	Y; year code, WW; week code
	Z	hFE1 Classification

Typical Characteristics

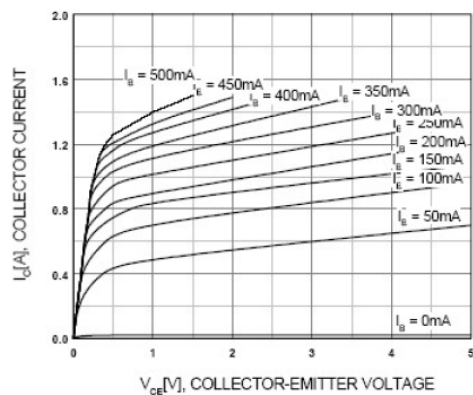


Figure 1. Static Characteristic

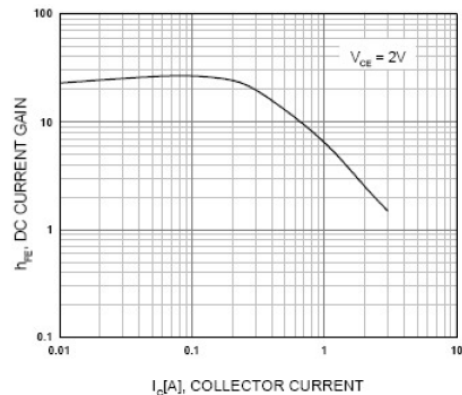


Figure 2. DC current Gain

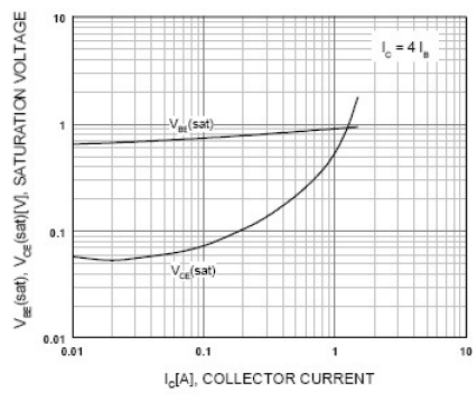


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

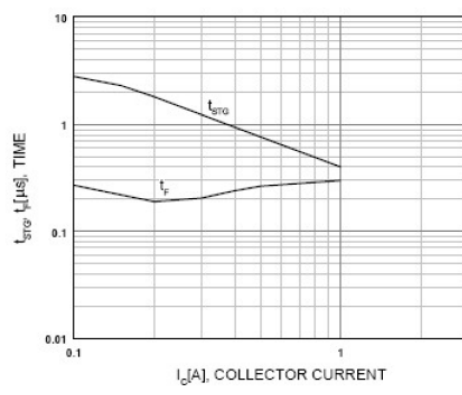
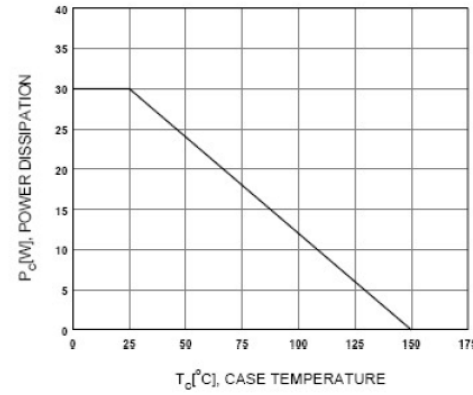
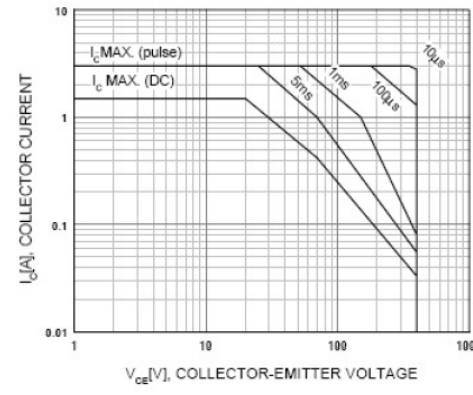
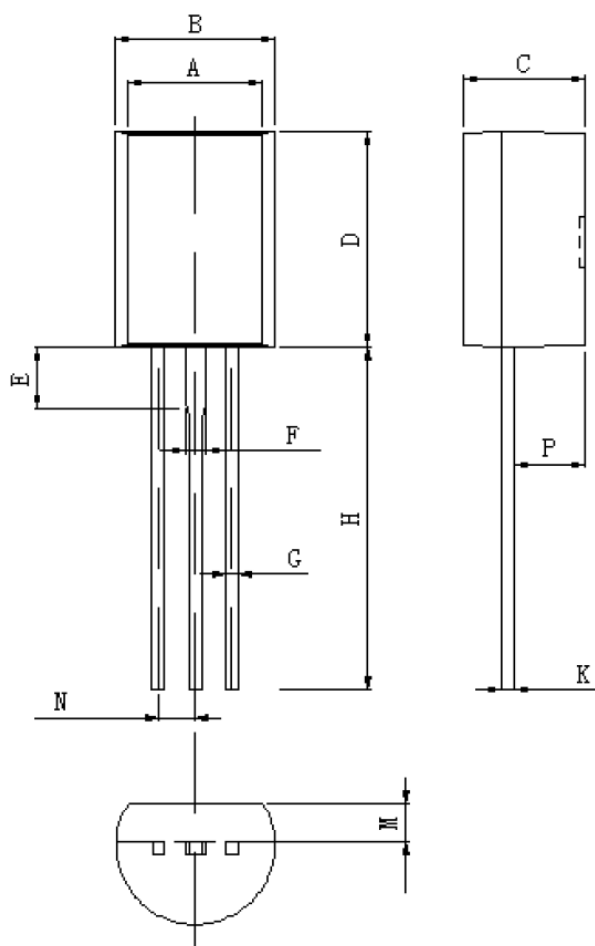


Figure 4. Switching Time



Package Dimensions

TO-92L



DIM	MILLIMETERS
A	5.8 $\pm$ 0.2
B	6.3 $\pm$ 0.2
C	4.8 $\pm$ 0.2
D	8.6 $\pm$ 0.2
E	3.0 $\pm$ 0.2
F	1.0 $\pm$ 0.2
G	0.5 $\pm$ 0.1
H	13.0 $\pm$ 0.2
K	0.5 $\pm$ 0.1
M	1.5 $\pm$ 0.2
N	1.4 $\pm$ 0.2
P	2.9 $\pm$ 0.3

Dimensions in Millimeters