

KSG13005AR



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Switch Mode series NPN silicon Power Transistor

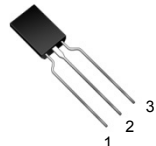
- High voltage, high speed power switching
- Suitable for switching regulator, inverters motor controls

Absolute Maximum Ratings TC=25°C unless otherwise noted

3 Amperes
NPN Silicon Power Transistor
3.8 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	3	A
Collector Current(Pulse)	I_{CP}	6	A
Base Current	I_B	1.5	A
Collector Dissipation(Tc=25°C)	P_C	3.8	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-65~150	°C

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



Electrical Characteristics TC=25°C unless otherwise noted

CHARACTERISTICS	SYMBOL	Test Condition	Min	Typ.	Max	Unit
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C=10mA, I_B=0$	400			V
Emitter Cut-off Current	I_{EBO}	$V_{EB}=9V, I_C=0$			1	mA
*DC Current Gain	h_{FE1} h_{FE2}	$V_{CE}=5V, I_C=1A$ $V_{CE}=5V, I_C=2A$	10 8		40 24	
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1A, I_B=0.2A$ $I_C=2A, I_B=0.5A$ $I_C=3A, I_B=0.75A$			0.5 0.6 1.0	V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=0.2A$ $I_C=2A, I_B=0.5A$			1.2 1.6	V
Output Capacitance	C_{ob}	$V_{CB}=10V, f=0.1MHz$		65		pF
Current Gain Bandwidth Product	f_T	$V_{CE}=10V, I_C=0.5A$	4			MHz
Turn on Time	t_{on}	$V_{CC}=125V, I_C=2A$ $I_{B1}=0.4A, I_{B2}=-0.4A$ $R_L=62.5\Omega$			0.8	μS
Storage Time	t_{stg}				4.0	μS
Fall Time	t_f				0.9	μS

* Pulse Test: Pulse Width \leq 300 μs , Duty Cycle \leq 2%

Note.

hFE1 Classification	R	19 ~ 28
	O	26 ~ 35
	Y	33 ~ 40

Package Mark information.

S	S	SemiHow Symbol
YWW	Z	Y; year code, WW; week code
KSG13005AR	Z	hFE1 Classification

Typical Characteristics

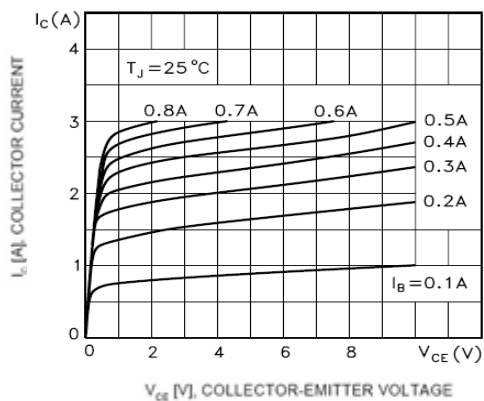


Figure 1. Static Characteristic

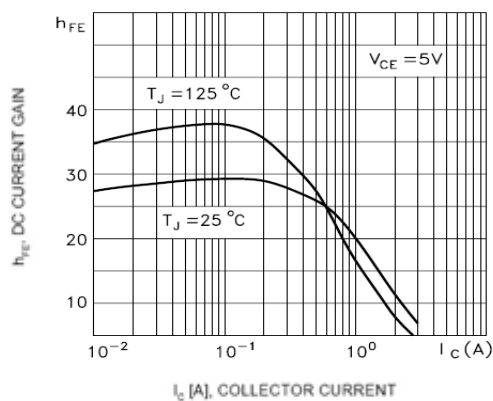


Figure 2. DC current Gain

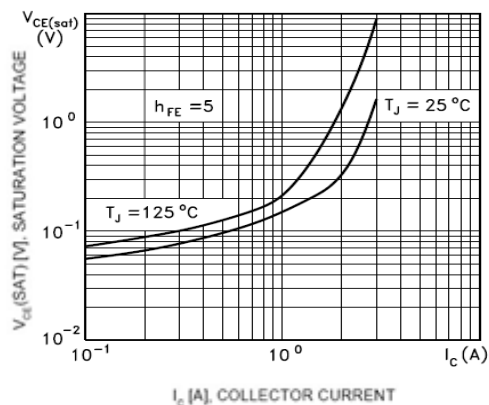


Figure 3. Collector-Emitter Saturation Voltage

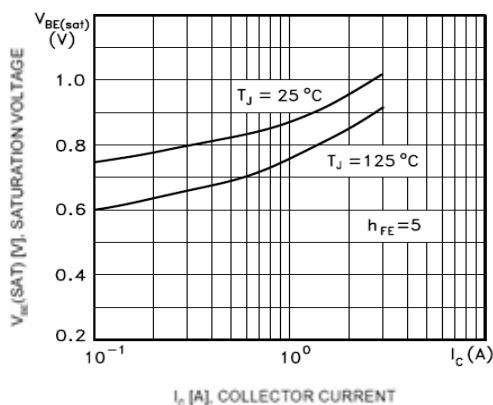


Figure 4. Base-Emitter Saturation Voltage

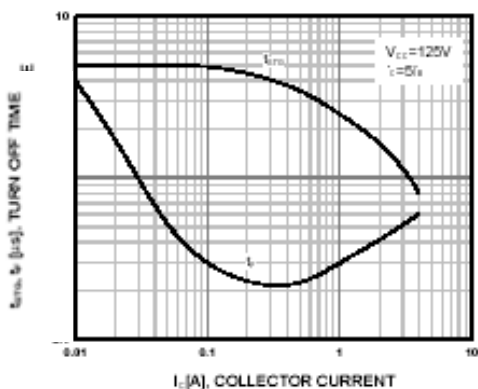


Figure 5. Turn Off Time

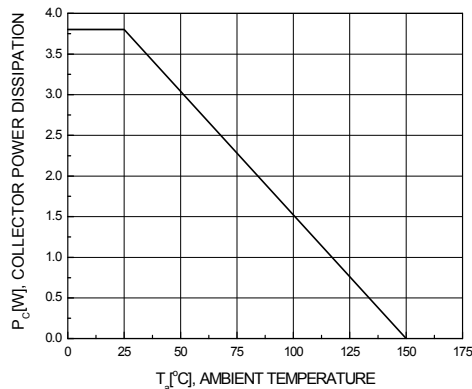


Figure 6. Power Derating

Typical Characteristics (Continued)

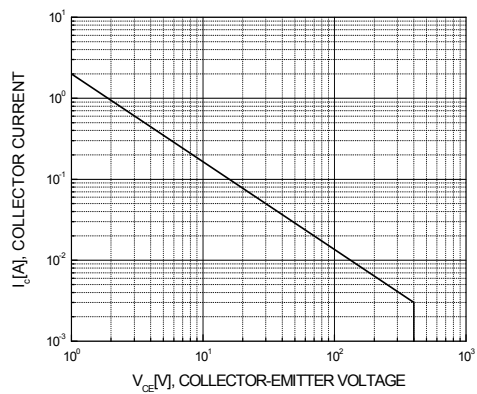


Figure 7. Forward Bias Safe Operating Area

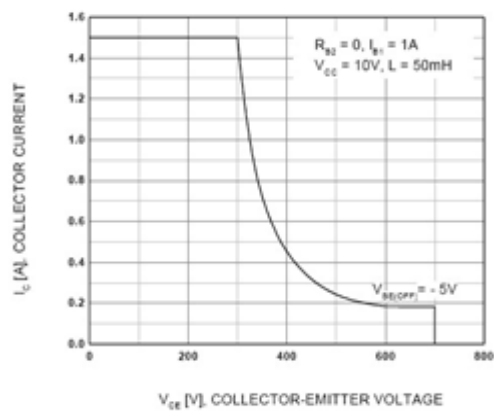
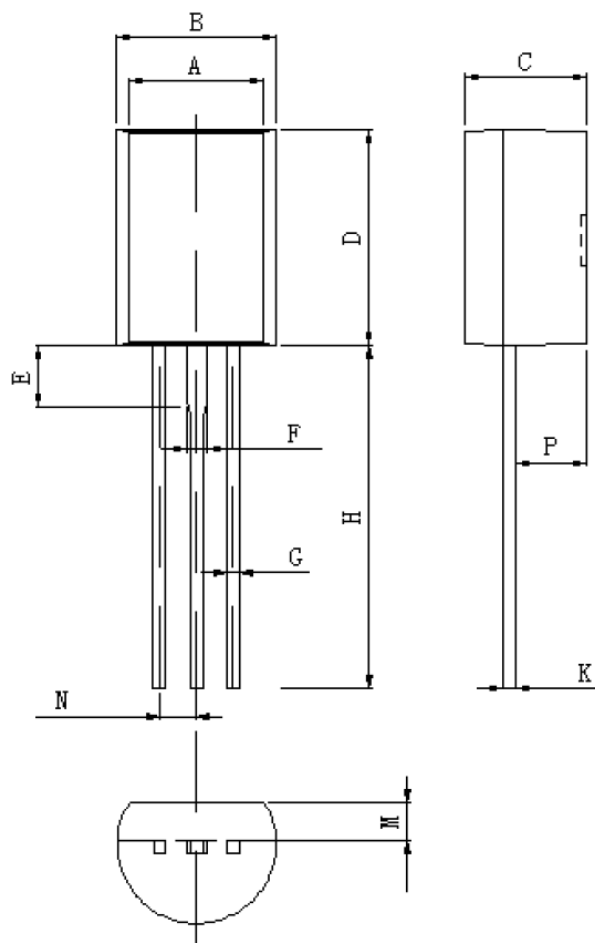


Figure 8. Reverse Bias Safe Operating Area

Package Dimensions

TO-92L



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

Dimensions in Millimeters