

**isc Silicon NPN Power Transistor**

**KSC5023**

**DESCRIPTION**

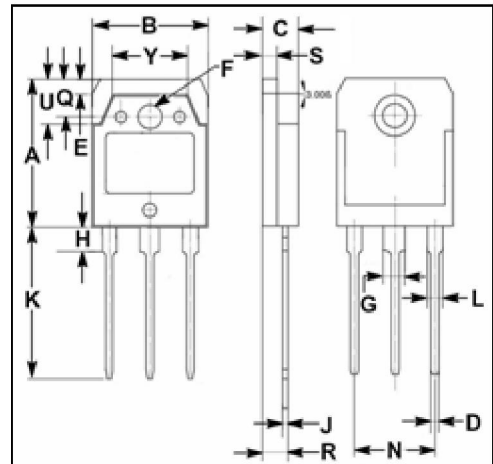
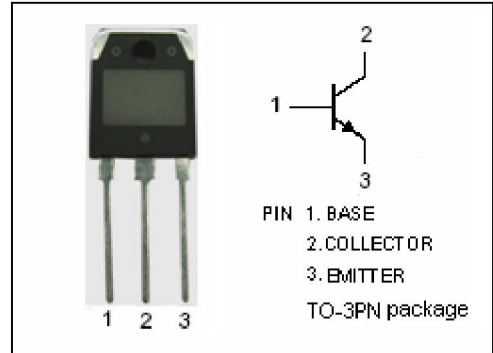
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 500V(\text{Min})$
- High Switching Speed
- Wide Area of Safe Operation

**APPLICATIONS**

- Designed for switching regulator and general purpose applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	800	V
$V_{CEO}$	Collector-Emitter Voltage	500	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	7	A
$I_{CM}$	Collector Current-Peak	14	A
$I_B$	Base Current-Continuous	3	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	80	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.10
H	3.20	3.40
J	0.595	0.605
K	20.50	20.70
L	1.90	2.10
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.005
U	5.90	6.10
Y	9.90	10.10

## isc Silicon NPN Power Transistor

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## ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEX(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=2.5\text{A}; I_{B1}=-I_{B2}=1\text{A};$ $L=1\text{mH, Clamped}$	500			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	800			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=5\text{mA}; R_{BE}=\infty$	500			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.6\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.6\text{A}$			1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=500\text{V}; I_E=0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=0.6\text{A}; V_{CE}=5\text{V}$	15		50	
$h_{FE-2}$	DC Current Gain	$I_C=3\text{A}; V_{CE}=5\text{V}$	8			
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1\text{MHz}$		80		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.6\text{A}; V_{CE}=10\text{V}$		18		MHz

## Switching Times; Resistive Load

$t_{on}$	Turn-On Time	$I_C=4\text{A}; I_{B1}=0.8\text{A}; I_{B2}=-1.6\text{A};$ $V_{CC}=200\text{V}; R_L=50\Omega$			0.5	$\mu\text{s}$
$t_s$	Storage Time				3.0	$\mu\text{s}$
$t_f$	Fall Time				0.3	$\mu\text{s}$

◆  $h_{FE-1}$  Classifications

R	O	Y
15-30	20-40	30-50