

**isc Silicon NPN Power Transistor**

**KSC5024**

**DESCRIPTION**

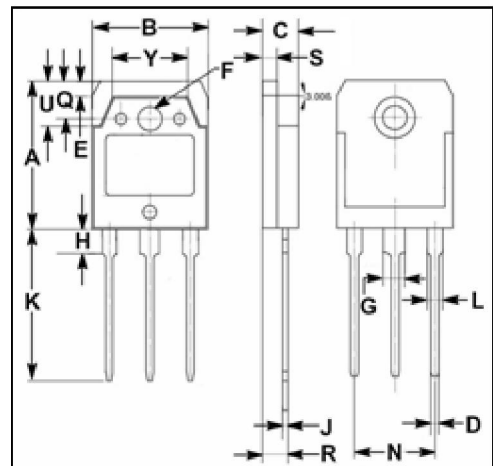
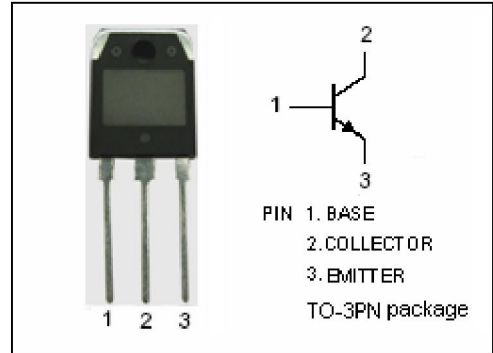
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 500V(\text{Min})$
- High Switching Speed
- Wide Area of Safe Operation

**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	10	A
$I_{CM}$	Collector Current-Peak	20	A
$I_B$	Base Current-Continuous	3	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	90	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	$I_C= 3.5A; I_{B1}= -I_{B2}= 1.4A;$ $L= 500\ \mu\text{H, Clamped}$	500			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C= 1mA; I_E= 0$	800			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C= 5mA; R_{BE}= \infty$	500			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E= 1mA; I_C= 0$	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C= 4A; I_B= 0.8A$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C= 4A; I_B= 0.8A$			1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}= 500V; I_E= 0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}= 5V; I_C= 0$			10	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C= 0.8A; V_{CE}= 5V$	15		50	
$h_{FE-2}$	DC Current Gain	$I_C= 4A; V_{CE}= 5V$	8			
$C_{OB}$	Output Capacitance	$I_E= 0; V_{CB}= 10V; f_{test}= 1\text{MHz}$		120		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C= 0.8A; V_{CE}= 10V$		18		MHz

## Switching Times; Resistive Load

$t_{on}$	Turn-On Time	$I_C= 5A; I_{B1}= 1A; I_{B2}= -2A;$ $V_{CC}=200V; R_L=40\ \Omega$			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