

**isc Silicon NPN Power Transistor**

**KSC5338**

**DESCRIPTION**

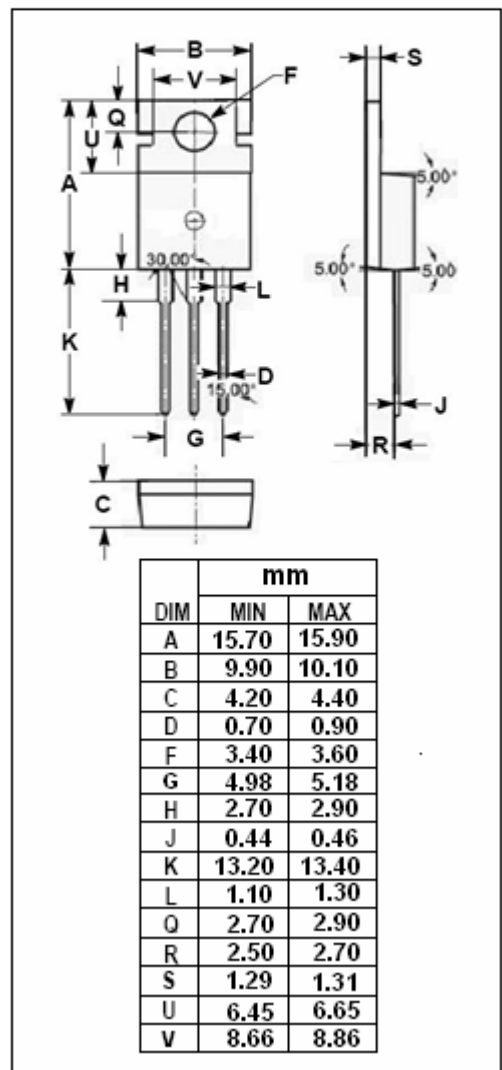
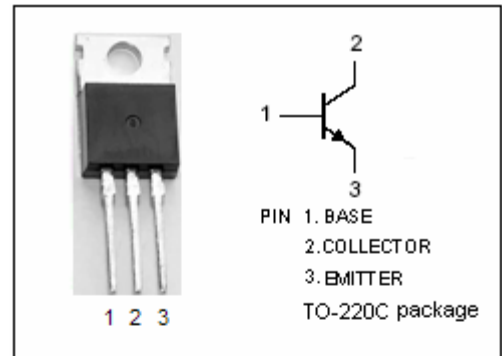
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 450V(\text{Min})$
- High Switching Speed
- Wide Area of Safe Operation

**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	1000	V
$V_{CEO}$	Collector-Emitter Voltage	450	V
$V_{EBO}$	Emitter-Base Voltage	9	V
$I_C$	Collector Current-Continuous	5	A
$I_{CM}$	Collector Current-Peak	10	A
$I_B$	Base Current-Continuous	2	A
$I_{BM}$	Base Current-Peak	4	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	100	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$



## isc Silicon NPN Power Transistor

## KSC5338

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	1000			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=5\text{mA}; I_B=0$	450			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	9			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=1\text{A}; I_B=0.1\text{A}$			0.8	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.4\text{A}$			0.5	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=1\text{A}; I_B=0.1\text{A}$			1.1	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.4\text{A}$			1.25	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=800\text{V}; V_{BE}=0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=9\text{V}; I_C=0$			10	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=5\text{V}$	15		30	
$h_{FE-2}$	DC Current Gain	$I_C=2\text{A}; V_{CE}=1\text{V}$	6			
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{\text{test}}=0.1\text{MHz}$		70		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.1\text{A}; V_{CE}=6\text{V}$		14		MHz

## Switching Times

$t_{on}$	Turn-On Time	$I_C=1\text{A}; I_{B1}=-I_{B2}=0.2\text{A}; V_{CC}=125\text{V}$			0.2	$\mu\text{s}$
$t_s$	Storage Time				2.0	$\mu\text{s}$
$t_f$	Fall Time				0.5	$\mu\text{s}$