

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

2SC3969

DESCRIPTION

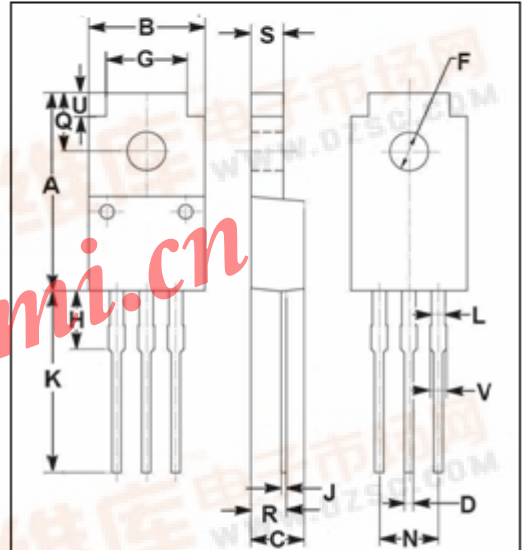
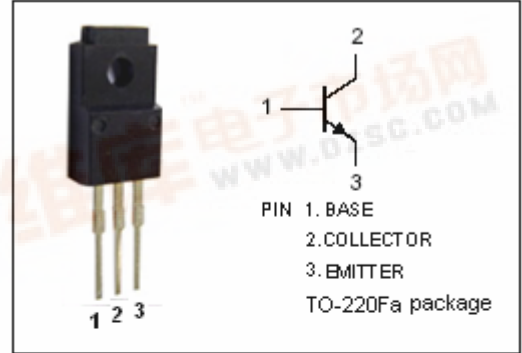
- Low Collector Saturation Voltage
- High Collector-Emitter Breakdown Voltage:
: $V_{(BR)CEO} = 400V$ (Min)
- High Switching Speed

APPLICATIONS

- Designed for switching regulator applications

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ C$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	400	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	2	A
I_{CM}	Collector Current-Peak	4	A
P_C	Collector Power Dissipation @ $T_C=25^\circ C$	20	W
	Collector Power Dissipation @ $T_a=25^\circ C$	2	
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature Range	-55~150	$^\circ C$



DIM	mm	
	MIN	MAX
A	16.85	17.15
B	9.90	10.10
C	4.35	4.65
D	0.75	0.80
F	3.20	3.40
G	6.90	7.10
H	5.15	5.45
J	0.45	0.75
K	13.35	13.65
L	1.10	1.30
N	4.98	5.18
Q	4.85	5.15
R	2.95	3.25
S	2.70	2.90
U	1.75	2.05
V	1.30	1.50



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=1.0\text{A}$; $I_{B1}=0.1\text{A}$, $L=1\text{mH}$	400			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=50\mu\text{A}$; $I_E=0$	400			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}$; $I_B=0$	400			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=50\mu\text{A}$; $I_C=0$	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=1\text{A}$; $I_B=0.2\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=1\text{A}$; $I_B=0.2\text{A}$			1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=400\text{V}$; $I_E=0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7\text{V}$; $I_C=0$			10	μA
h_{FE}	DC Current Gain	$I_C=0.1\text{A}$; $V_{CE}=5\text{V}$	25		50	
f_T	Current-Gain—Bandwidth Product	$I_E=-0.1\text{A}$; $V_{CE}=10\text{V}$		10		MHz
C_{OB}	Output Capacitance	$I_E=0$; $V_{CB}=10\text{V}$; $f=1.0\text{MHz}$		30		pF

Switching times

t_{on}	Turn-on Time	$I_C=0.8\text{A}$; $I_{B1}=-I_{B2}=0.08\text{A}$; $R_L=250\Omega$; $V_{CC}\approx 200\text{V}$			1.0	μs
t_{stg}	Storage Time				2.5	μs
t_f	Fall Time				1.0	μs