

isc Silicon NPN Power Transistor

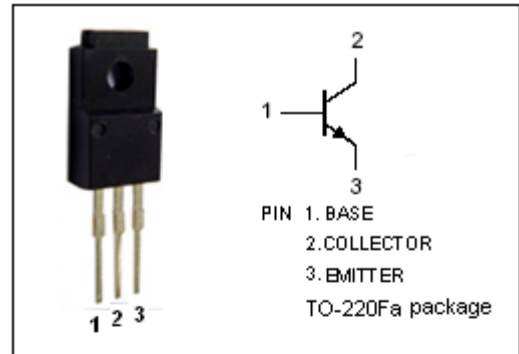
2SC3566

DESCRIPTION

- Low Collector Saturation Voltage
- Fast Switching Speed

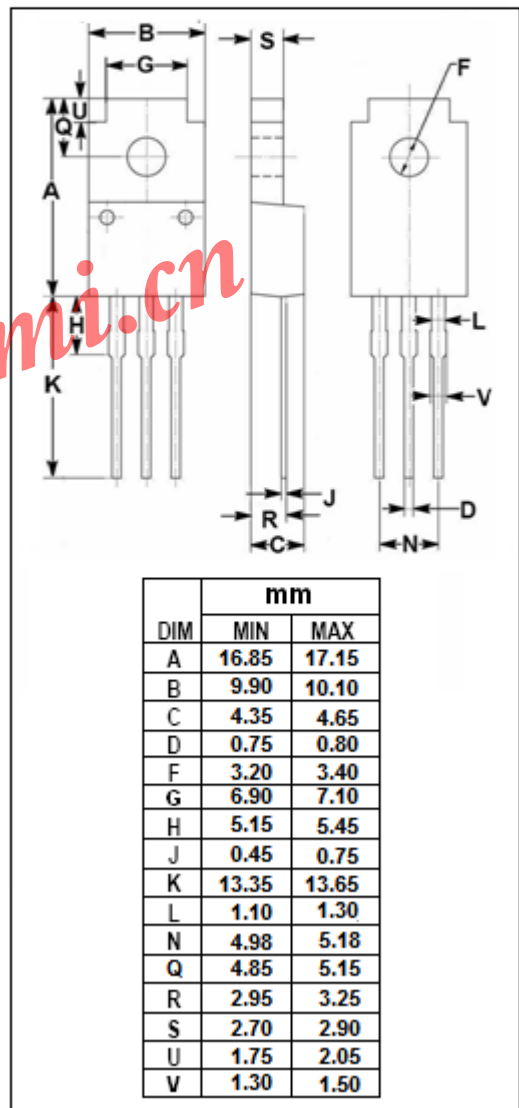
APPLICATIONS

- Designed for high-speed switching, and is ideal for use as a driver in devices such as switching regulators, DC/DC converters, and high frequency power amplifiers.



ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CBO}	Collector-Base Voltage	80	V
V _{CEO}	Collector-Emitter Voltage	60	V
V _{EBO}	Emitter-Base Voltage	12	V
I _C	Collector Current-Continuous	5	A
I _{CM}	Collector Current-Peak	10	A
I _B	Base Current-Continuous	2.5	A
P _C	Collector Power Dissipation @ T _a =25°C	1.5	W
	Total Power Dissipation @ T _C =25°C	25	
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature Range	-55~150	°C



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=3.0\text{A}; I_B=0.3\text{A}, L=1\text{mH}$	60		V
$V_{CEX(SUS)-1}$	Collector-Emitter Sustaining Voltage	$I_C=3.0\text{A}; I_{B1}=-I_{B2}=0.3\text{A}, V_{BE(OFF)}=5.0\text{V}, L=180\mu\text{H}, \text{clamped}$	80		V
$V_{CEX(SUS)-2}$	Collector-Emitter Sustaining Voltage	$I_C=6.0\text{A}; I_{B1}=0.6\text{A}; I_{B2}=-0.3\text{A}, V_{BE(OFF)}=-5.0\text{V}, L=180\mu\text{H}, \text{clamped}$	60		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3.0\text{A}; I_B=0.3\text{A}$		0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3.0\text{A}; I_B=0.3\text{A}$		1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=60\text{V}; I_E=0$		10	μA
I_{CER}	Collector Cutoff Current	$V_{CE}=60\text{V}; R_{BE}=51\Omega, T_a=125^{\circ}\text{C}$		1.0	mA
I_{CEX}	Collector Cutoff Current	$V_{CE}=60\text{V}; V_{BE(off)}=-1.5\text{V}$ $V_{CE}=60\text{V}; V_{BE(off)}=-1.5\text{V}, T_a=125^{\circ}\text{C}$		10 1.0	μA mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$		10	μA
h_{FE-1}	DC Current Gain	$I_C=0.3\text{A}; V_{CE}=5\text{V}$	40		
h_{FE-2}	DC Current Gain	$I_C=3.0\text{A}; V_{CE}=5\text{V}$	40	200	

Switching times

t_{on}	Turn-on Time	$I_C=3.0\text{A}, R_L=17\Omega,$ $I_{B1}=-I_{B2}=0.3\text{A}, V_{CC}\approx 50\text{V}$		0.5	μs
t_{stg}	Storage Time			3.0	μs
t_f	Fall Time			0.5	μs

◆ h_{FE-2} Classifications

M	L	K
40-80	60-120	100-200