

isc Silicon NPN Power Transistor

2SC3709

DESCRIPTION

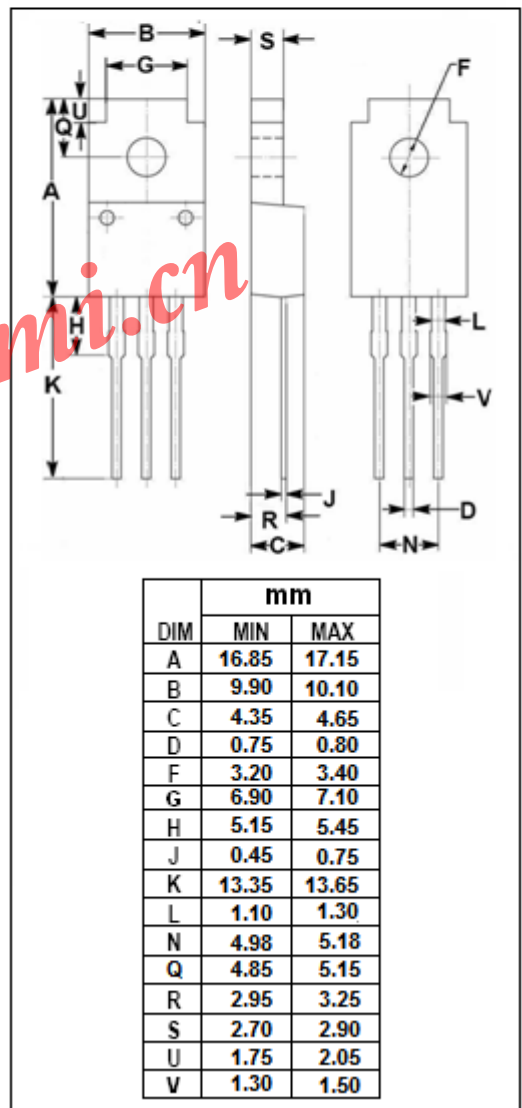
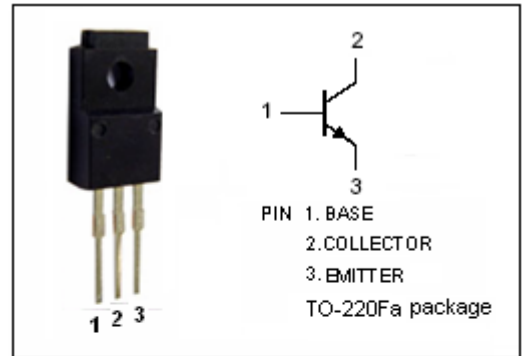
- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 0.4V(\text{Max}) @ I_C = 6A$
- Good Linearity of  $h_{FE}$
- High Switching Speed
- Complement to Type 2SA1451

APPLICATIONS

- Designed for high current switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emmitter Voltage	50	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	12	A
$I_B$	Base Current-Continuous	2	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ C$	30	W
$T_J$	Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ C$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=50\text{mA}; I_B=0$	50			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.3\text{A}$			0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.3\text{A}$			1.2	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=60\text{V}; I_E=0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=6\text{V}; I_C=0$			10	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=1\text{A}; V_{CE}=1\text{V}$	70		240	
$h_{FE-2}$	DC Current Gain	$I_C=6\text{A}; V_{CE}=1\text{V}$	40			
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1\text{MHz}$		180		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=5\text{V}$		90		MHz

## Switching Times

$t_{on}$	Turn-on Time	$I_{B1}=-I_{B2}=0.3\text{A}, R_L=5\Omega;$ $V_{CC}\approx 30\text{V},$		0.2		$\mu\text{s}$
$t_{stg}$	Storage Time			1.0		$\mu\text{s}$
$t_f$	Fall Time			0.2		$\mu\text{s}$

◆  $h_{FE-1}$  Classifications

O	Y
70-140	120-240