

isc Silicon NPN Power Transistor

2SC2139

DESCRIPTION

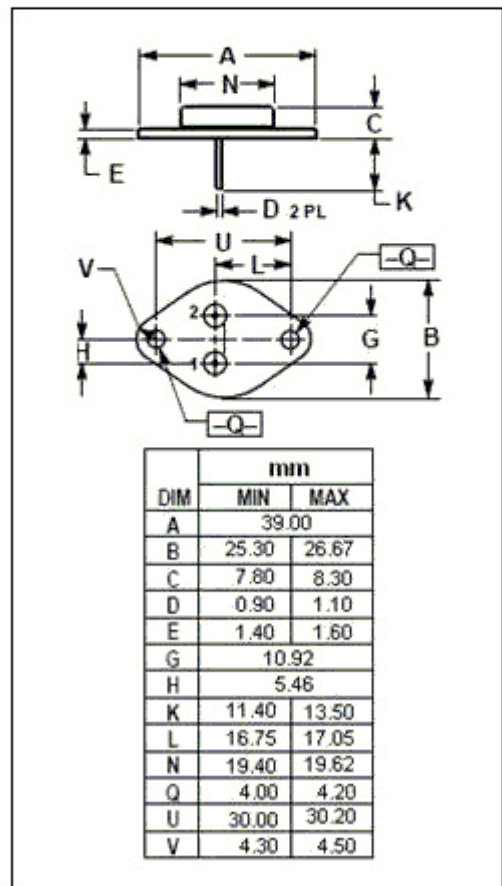
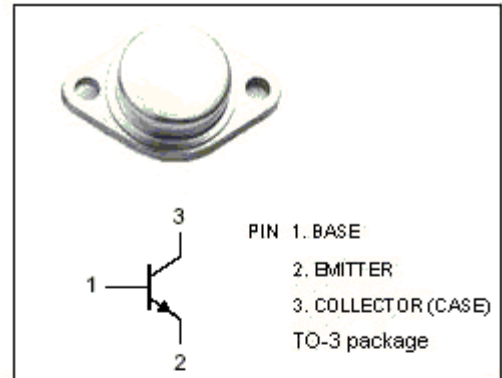
- High Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 400V$  (Min)
- High Switching Speed

APPLICATIONS

- Switching regulator and high voltage switching applications.
- High speed DC-DC converter applications.

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

SYMBOL	PARAMETER	MAX	UNIT
$V_{CBO}$	Collector-Base Voltage	500	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	10	A
$I_B$	Base Current-Continuous	2	A
$P_C$	Collector Power Dissipation @ $T_C=25^{\circ}C$	100	W
$T_j$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-65~150	$^{\circ}C$



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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	$I_C=10\text{mA}; I_B=0$	400			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	500			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$			2.0	V
$h_{FE}$	DC Current Gain	$I_C=5\text{A}; V_{CE}=5\text{V}$	10			
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=400\text{V}; I_E=0$			0.1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=6\text{V}; I_C=0$			1.0	mA

## Switching Times

$t_r$	Rise Time	$V_{CC}=200\text{V}; I_{B1}=-I_{B2}=0.5\text{A}; R_L=40\Omega$			1.0	$\mu\text{s}$
$t_{stg}$	Storage Time				2.0	$\mu\text{s}$
$t_f$	Fall Time				1.0	$\mu\text{s}$