

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

2SC4131

DESCRIPTION

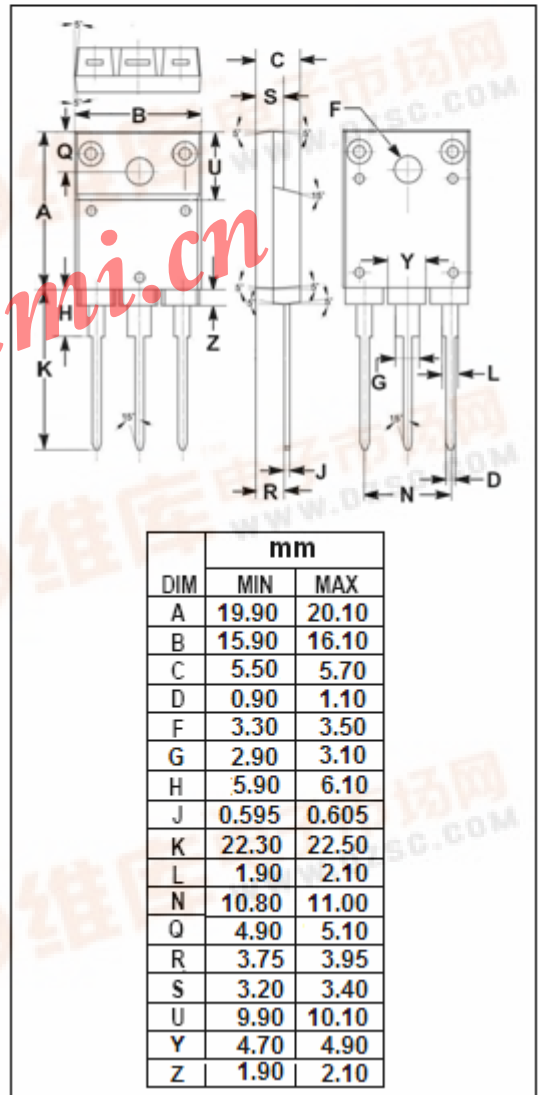
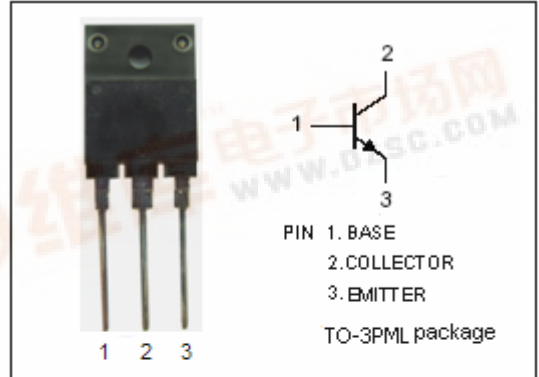
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 50V(\text{Min})$
- Low Collector Saturation Voltage-  
:  $V_{CE(\text{sat})} = 0.5V(\text{Max}) @ I_C = 5A$

APPLICATIONS

- Designed for DC-DC converter, emergency lighting inverter and general purpose applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{EBO}$	Emitter-Base Voltage	15	V
$I_C$	Collector Current-Continuous	15	A
$I_{CP}$	Collector Current-Peak	25	A
$I_B$	Base Current-Continuous	4	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	60	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{\text{stg}}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



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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	$I_C=25\text{mA}; I_B=0$	50			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=80\text{mA}$			0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=80\text{mA}$			1.2	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=100\text{V}; I_E=0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=15\text{V}; I_C=0$			10	$\mu\text{A}$
$h_{FE}$	DC current gain	$I_C=5\text{A}; V_{CE}=1\text{V}$	60		360	
$f_T$	Current-Gain—Bandwidth Product	$I_E=-1\text{A}; V_{CE}=12\text{V}$		18		MHz
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$		210		pF

## Switching times

$t_{on}$	Turn-on Time	$I_C=5\text{A}; I_{B1}=80\text{mA}; I_{B2}=-80\text{mA}$ $R_L=4\Omega; V_{CC}=20\text{V}$		0.5		$\mu\text{s}$
$t_{stg}$	Storage Time			2.0		$\mu\text{s}$
$t_f$	Fall Time			0.4		$\mu\text{s}$