

Silicon NPN Power Transistor

DESCRIPTION

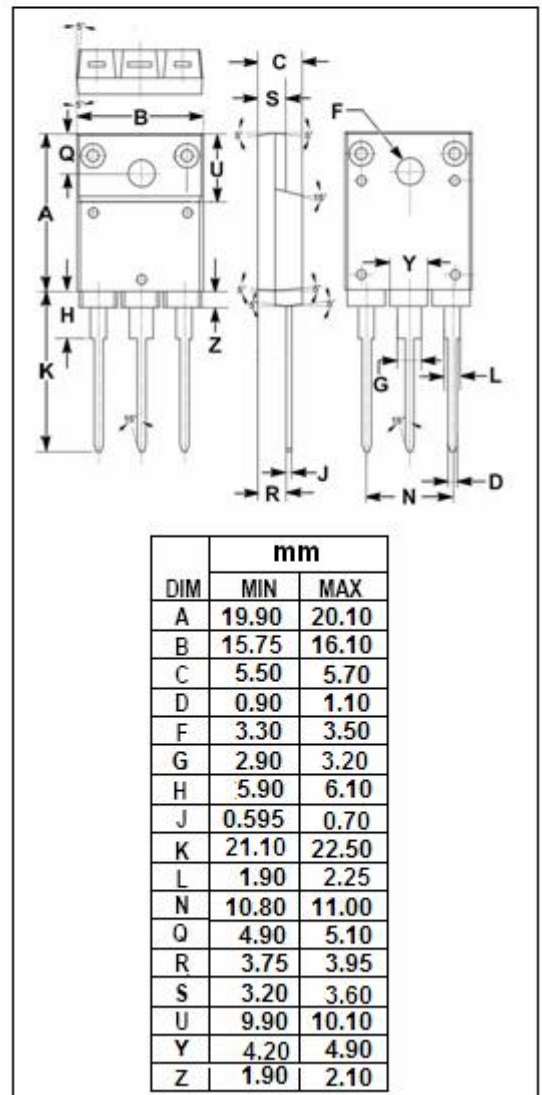
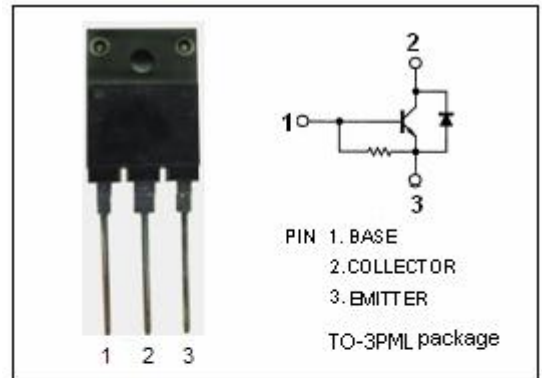
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 50V(\text{Min})$
- Low Collector Saturation Voltage-
: $V_{CE(\text{sat})} = 0.5V(\text{Max}) @ I_C = 5A$

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_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



Ordering Information

Product	Package	Packaging
2SC4131T5TL	TO-3PML	Tube



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	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}= 15\text{V}; I_C= 0$			10	μA
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		μs
t_{stg}	Storage Time			2.0		μs
t_f	Fall Time			0.4		μs

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