



## NPN 2N5671 – 2N5672

### HIGH CURRENT FAST SWITCHING APPLICATIONS

The 2N5671 and 2N5672 are silicon multiepitaxial planer NPN transistors in Jedec TO-3. They are especially intended for high current, fast switching industrial applications.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
$V_{CEO}$	Collector-Emitter Voltage	2N5671	90	V	
		2N5672	120		
$V_{CBO}$	Collector-Base Voltage	2N5671	120	V	
		2N5672	150		
$V_{EBO}$	Emitter-Base Voltage	2N5671	7.0	V	
		2N5672			
$V_{CEX}$	Collector-Emitter Voltage $V_{EB} = -1.5V, R_{EB} = 50 \Omega$	2N5671	120	V	
		2N5672	150		
$V_{CER}$	Collector-Emitter Voltage $R_{EB} \leq 50 \Omega$	2N5671	110	V	
		2N5672	140		
$I_C$	Collector Current	2N5671	30	A	
		2N5672			
$I_B$	Base Current	2N5671	10	A	
		2N5672			
$P_D$	Total Device Dissipation	@ $T_C = 25^\circ$	2N5671	140	Watts
			2N5672		
$T_J$	Junction Temperature	2N5671	200	$^\circ C$	
		2N5672			
$T_{Stg}$	Storage Temperature	2N5671	-65 to +200	$^\circ C$	
		2N5672			

#### THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
$R_{thJC}$	Thermal Resistance, Junction to Case	2N5671	1.25	$^\circ C/W$
		2N5672		

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## ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (1)	$I_C=200\text{ mA}, I_B=0$	2N5671	90	-	-	V
			2N5672	120	-	-	
$V_{CER(SUS)}$ $R_{BE}=50\Omega$	Collector-Emitter Sustaining Voltage (1)	$I_C=0.2\text{ A}, R_{BE}=50\Omega$	2N5671	110	-	-	V
			2N5672	140	-	-	
$V_{CEX(SUS)}$	Collector-Emitter Sustaining Voltage (1)	$I_C=0.2\text{ A}, V_{BE}=-1.5\text{ V}, R_{BE}=50\Omega$	2N5671	120	-	-	V
			2N5672	150	-	-	
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=80\text{ V}$	2N5671	-	-	10	mA
			2N5672	-	-	-	
$I_{CEX}$	Collector Cutoff Current	$V_{CE}=110\text{ V}, V_{EB}=-1.5\text{ V},$ $V_{CE}=135\text{ V}, V_{EB}=-1.5\text{ V},$ $V_{CE}=100\text{ V}, V_{EB}=-1.5\text{ V},$ $T_C=150^\circ\text{C}$	2N5671	-	-	12	mA
			2N5672	-	-	10	
			2N5671	-	-	15	
			2N5672	-	-	10	
$I_{EBO}$	Emitter Cutoff Current	$V_{BE}=7.0\text{ V}, I_C=0$	2N5671	-	-	10	mA
			2N5672	-	-	-	
$h_{FE}$	DC Current Gain (1)	$I_C=15\text{ A}, V_{CE}=2.0\text{ V}$	2N5671	20	-	100	-
			2N5672			-	
		$I_C=20\text{ A}, V_{CE}=5.0\text{ V}$	2N5671	20	-	-	
			2N5672			-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (1)	$I_C=15\text{ A}, I_B=1.2\text{ A}$	2N5671	-	-	0.75	V
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (1)	$I_C=15\text{ A}, I_B=1.2\text{ A}$	2N5672	-	-	1.5	

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
$V_{BE}$	Base-Emitter Voltage (1)	$I_C=15\text{ A}, V_{CE}=5.0\text{ V}$	2N5671	-	-	1.6	V
			2N5672				
$f_T$	Transition frequency	$V_{CE}=10\text{ V}, I_C=2\text{ A},$	2N5671	50	-	-	MHz
			2N5672				
$I_{s/b}$	Second Breakdown energy (2)	$V_{CE}=24\text{ V}$	2N5671	5.8	-	-	A
		$V_{CE}=45\text{ V}$	2N5672	0.9	-	-	
$E_{s/b}$	Second Breakdown energy	$V_{BE}=-4\text{ V}, R_{BE}=20\Omega, L=180\mu\text{H}$	2N5671	20	-	-	mJ
			2N5672				
$t_{on}$	Turn-on time	$I_C=15\text{ A}, V_{CC}=30\text{ V}$ $I_{B1}=-I_{B2}=1.2\text{ A}$	2N5671	-	-	0.5	$\mu\text{s}$
$t_s$	Storage time		2N5671	-	-	1.5	
			2N5672	-	-	-	
$t_f$	File time		2N5671	-	-	0.5	
			2N5672	-	-	-	
$C_{BO}$	Collector-Base Capacitance		$I_E=0, V_{CB}=10\text{ V}, f=1\text{ MHz}$	2N5671	-	-	
		2N5672		-	-	-	

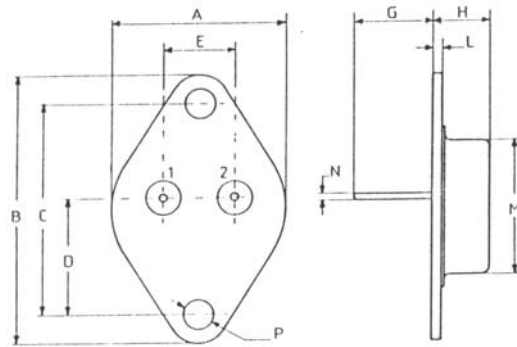
(1) Pulse Width  $\approx 300\ \mu\text{s}$ , Duty Cycle = 1.5%

(2) Pulsed : 1 s, non repetitive pulse

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## MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,51	1,004
B	38,93	1,53
C	30,12	1,18
D	17,25	0,68
E	10,89	0,43
G	11,62	0,46
H	8,54	0,34
L	1,55	0,6
M	19,47	0,77
N	1	0,04
P	4,06	0,16



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector

*Information furnished is believed to be accurate and reliable. However, CS assumes no responsibility for the consequences of use of such information nor for errors that could appear.*  
Data are subject to change without notice.