

*New Jersey Semi-Conductor Products, Inc.*

20 STERN AVE.  
SPRINGFIELD, NEW JERSEY 07081  
U.S.A.

TELEPHONE: (973) 376-2922  
(212) 227-6005  
FAX: (973) 376-8960

## Silicon NPN Power Transistor

## 2SC4428

### DESCRIPTION

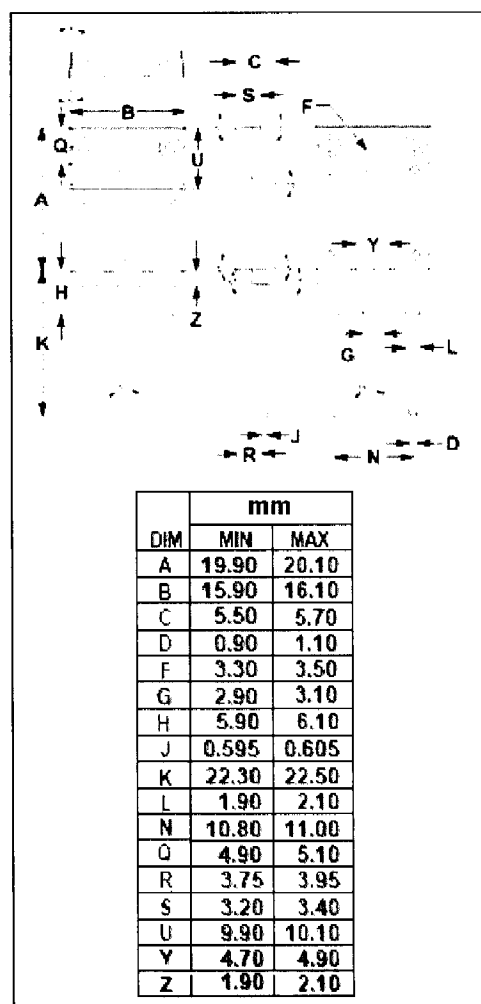
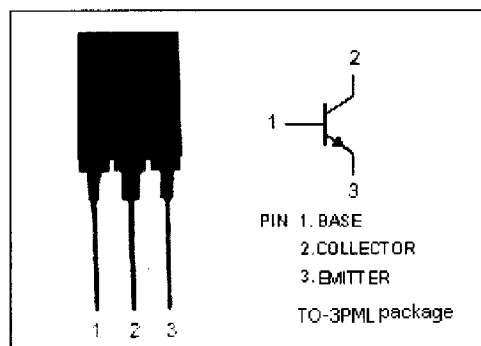
- High Breakdown Voltage-  
:  $V_{(BR)CEO} = 800V(\text{Min})$
- Fast Switching speed
- Wide Area of Safe Operation

### APPLICATIONS

- Designed for switching regulator Applications

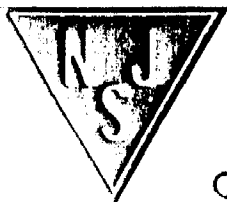
### ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	1100	V
$V_{CEO}$	Collector-Emitter Voltage	800	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	6	A
$I_{CP}$	Collector Current-Pulse	20	A
$I_B$	Base Current-Continuous	3	A
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	55	W
	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	3	
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

**Quality Semi-Conductors**



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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	$I_C=5\text{mA}; R_{BE}=\infty$	800			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	1100			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.6\text{A}$			2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.6\text{A}$			1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=800\text{V}; I_E=0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=0.4\text{A}; V_{CE}=5\text{V}$	10		40	
$h_{FE-2}$	DC Current Gain	$I_C=2\text{A}; V_{CE}=5\text{V}$	8			
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$		120		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.4\text{A}; V_{CE}=10\text{V}$		15		MHz

## Switching times

$t_{on}$	Turn-on Time	$I_C=4\text{A}; I_{B1}=0.8\text{A}; I_{B2}=-1.6\text{A}; R_L=100\Omega; V_{CC}=400\text{V}$			0.5	$\mu\text{s}$
$t_{stg}$	Storage Time				3.0	$\mu\text{s}$
$t_f$	Fall Time				0.3	$\mu\text{s}$

◆  $h_{FE-1}$  Classifications

K	L	M
10-20	15-30	20-40