

isc Silicon NPN Power Transistor

2SC4542

DESCRIPTION

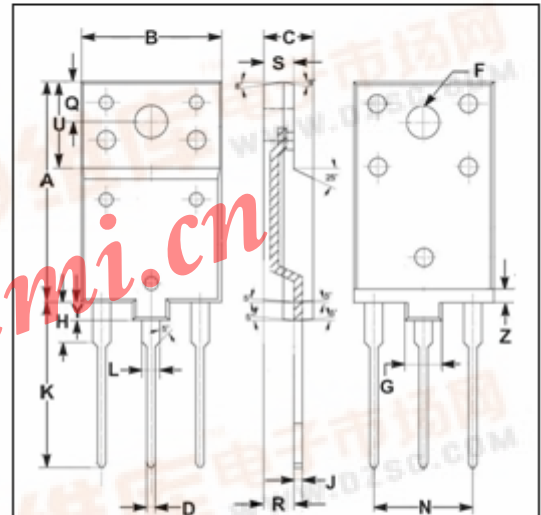
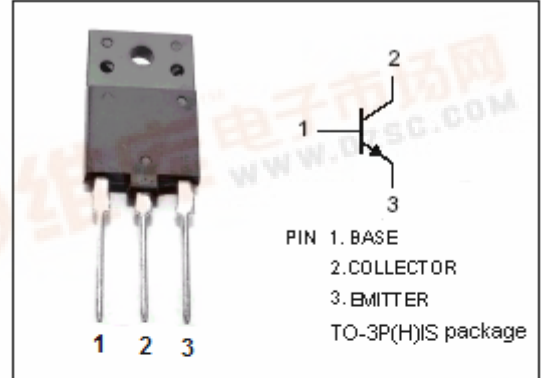
- High Breakdown Voltage-  
:  $V_{CBO}= 1500V$  (Min)
- High Switching Speed

APPLICATIONS

- Horizontal deflection output for high resolution display.
- High speed switching regulator output applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	1500	V
$V_{CEO}$	Collector-Emitter Voltage	600	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current- Continuous	10	A
$I_{CM}$	Collector Current- Peak	20	A
$I_B$	Base Current	5	A
$P_C$	Collector Power Dissipation @ $T_C=25^{\circ}C$	50	W
$T_J$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-55~150	$^{\circ}C$



DIM	mm	
	MIN	MAX
A	24.30	24.70
B	15.20	15.80
C	5.20	5.80
D	0.65	0.85
F	3.30	3.90
G	3.90	4.10
H	4.30	4.70
J	0.80	1.00
K	18.30	18.70
L	1.90	2.10
N	10.70	11.10
Q	4.40	4.60
R	3.30	3.70
S	3.20	3.40
U	9.50	9.70
Y	1.90	2.10
Z	1.40	1.60



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## ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=7\text{A}; I_B=1.7\text{A}$			5.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=7\text{A}; I_B=1.7\text{A}$			1.5	V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=5\text{mA}; I_B=0$	600			V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=1500\text{V}; I_E=0$			1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C=1\text{A}; V_{CE}=5\text{V}$	8			
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.1\text{A}; V_{CE}=10\text{V}$	1	3		MHz
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$		210		pF

## Switching Times

$t_{stg}$	Storage Time	$I_{CP}=7\text{A}, I_{B1}=1.4\text{A}; I_{B2}=-2.8\text{A}; R_L=28.5\Omega$		1.8	2.5	$\mu\text{s}$
$t_f$	Fall Time			0.1	0.2	$\mu\text{s}$