

**isc Silicon NPN Power Transistor**

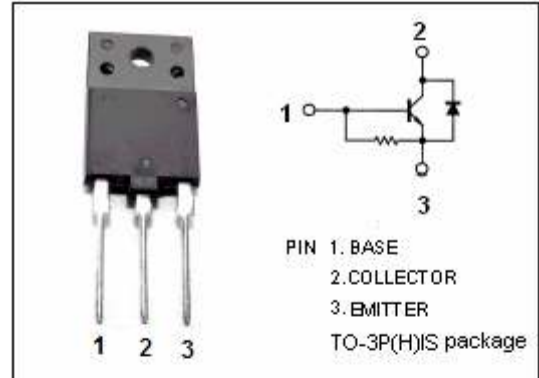
**S2055N**

**DESCRIPTION**

- High Voltage
- High Switching Speed
- Low Saturation Voltage
- Built-in Damper Diode

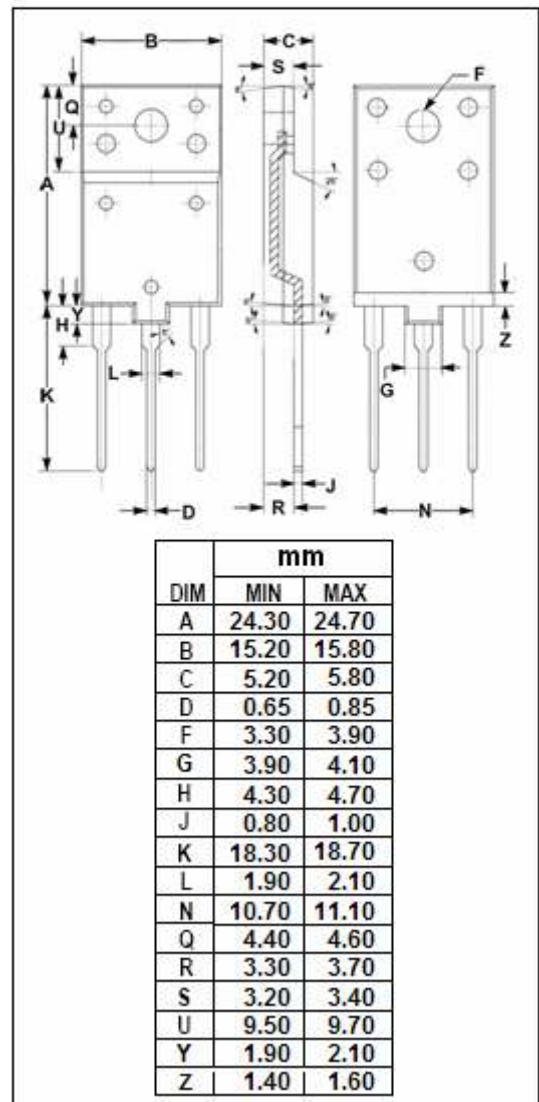
**APPLICATIONS**

- Color TV horizontal output applications



**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CES</sub>	Collector-Emitter Voltage	1500	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current-Continuous	8	A
I <sub>CM</sub>	Collector Current-peak	15	A
I <sub>B</sub>	Base Current	4	A
P <sub>C</sub>	Collector Power Dissipation @ T <sub>C</sub> = 25°C	50	W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-55~150	°C



**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	2.5	°C/W

## isc Silicon NPN Power Transistor

## S2055N

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{CEX(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=500\text{mA}; V_{BE}= -1.7\text{V}; L= 40\text{mH}$	700			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E= 400\text{mA}; I_C= 0$	5			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C= 4.5\text{A}; I_B= 2\text{A}$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C= 4.5\text{A}; I_B= 1\text{A}$			5.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C= 4.5\text{A}; I_B= 1\text{A}$			1.2	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}= 1500\text{V}; V_{BE}= 0$			1.0	mA
$h_{FE-1}$	DC Current Gain	$I_C= 1\text{A}; V_{CE}= 5\text{V}$	8		25	
$h_{FE-2}$	DC Current Gain	$I_C= 4.5\text{A}; V_{CE}= 5\text{V}$	4.5		9	
$C_{OB}$	Output Capacitance	$I_E= 0; V_{CB}= 10\text{V}; f= 1\text{MHz}$		95		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C= 0.1\text{A}; V_{CE}= 10\text{V}$		2		MHz
$V_{ECF}$	C-E Diode Forward Voltage	$I_F= 6\text{A}$			2.0	V

## Switching Times

$t_s$	Storage Time	$I_C= 4.5\text{A}; I_{B1(\text{end})}= 1\text{A}; f_H= 15.75\text{kHz}$			11	$\mu\text{s}$
$t_f$	Fall Time				0.6	$\mu\text{s}$