

# isc Silicon NPN Power Transistor

**MD2001FX**

## DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 700V$  (Min)
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

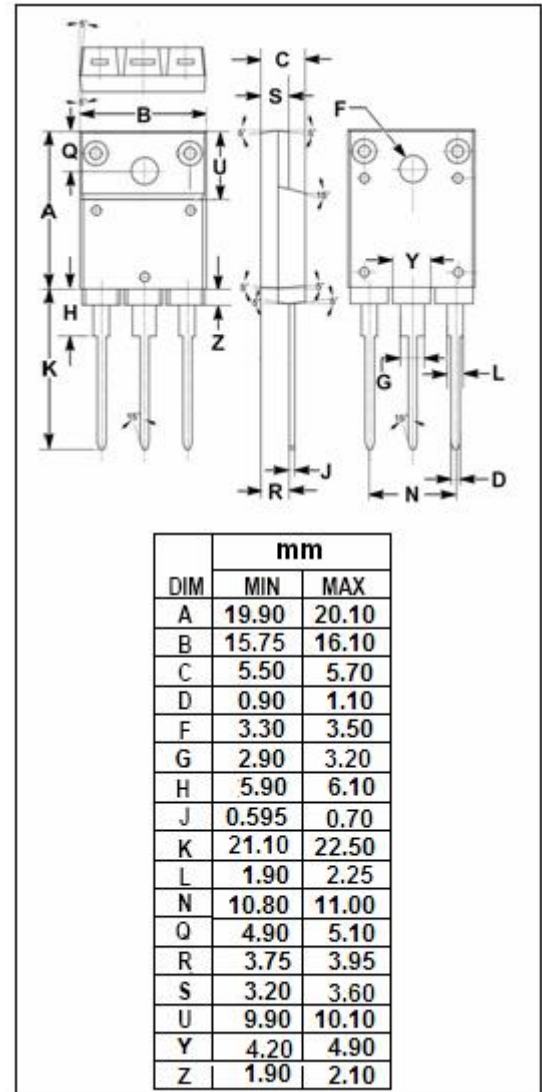
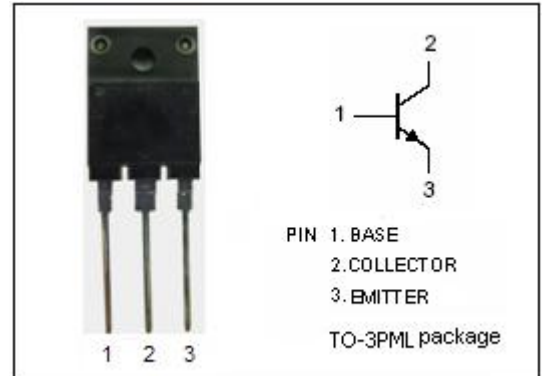
- Horizontal deflection output for monitor and real flat TV
- Switch mode power supplies for CRT TV

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	1500	V
$V_{CEO}$	Collector-Emitter Voltage	700	V
$V_{EBO}$	Emitter-Base Voltage	9	V
$I_C$	Collector Current- Continuous	12	A
$I_{CM}$	Collector peak current ( $t_p < 5ms$ )	18	A
$I_B$	Base Current- Continuous	6	A
$P_{TOT}$	Total dissipation at $T_c=25^\circ C$	58	W
$T_J$	Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ C$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	2.15	$^\circ C/W$



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## ELECTRICAL CHARACTERISTICS

T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(sus)</sub> <sup>(1)</sup>	Collector-emitter sustaining Voltage	I <sub>c</sub> = 50mA; I <sub>c</sub> = 0	700			V
V <sub>CE(sat)</sub> <sup>(1)</sup>	Collector-Emitter Saturation Voltage	I <sub>c</sub> = 6.0A; I <sub>B</sub> =1.5A			1.8	V
V <sub>BE(sat)</sub> <sup>(1)</sup>	Base-Emitter Saturation Voltage	I <sub>c</sub> = 6.0A; I <sub>B</sub> =1.5A			1.2	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 1500V ; I <sub>E</sub> = 0 V <sub>CB</sub> = 1500V ; I <sub>E</sub> = 0 , T <sub>C</sub> =125			0.2 2	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 9V ; I <sub>C</sub> = 0			1	mA
h <sub>FE-1</sub> <sup>(1)</sup>	DC Current Gain	I <sub>c</sub> = 6A ; V <sub>CE</sub> = 1V		4.5		
h <sub>FE-2</sub> <sup>(1)</sup>	DC Current Gain	I <sub>c</sub> = 6A ; V <sub>CE</sub> = 5V	4.5		7	

## Switching times

t <sub>s</sub>	Storage Time	I <sub>CP</sub> = 5A , I <sub>B(on)</sub> = 0.9A ; f <sub>H</sub> = 64kHz V <sub>BE(Off)</sub> = -2.7V, L <sub>BB(Off)</sub> =1.6uH		2.6		μs
t <sub>f</sub>	Fall Time			0.2		μs

1. Pulsed duration =300us,duty cycle ≤1.5%

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