

isc Silicon NPN Power Transistor

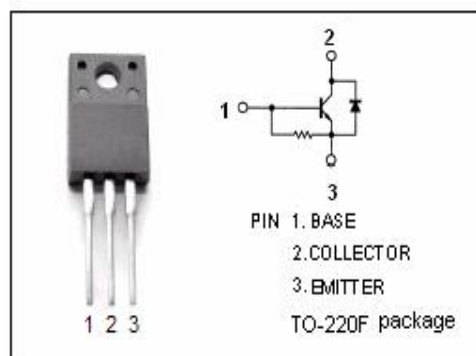
MD1803DFP

DESCRIPTION

- Low base-drive requirements
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 700V$ (Min)
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

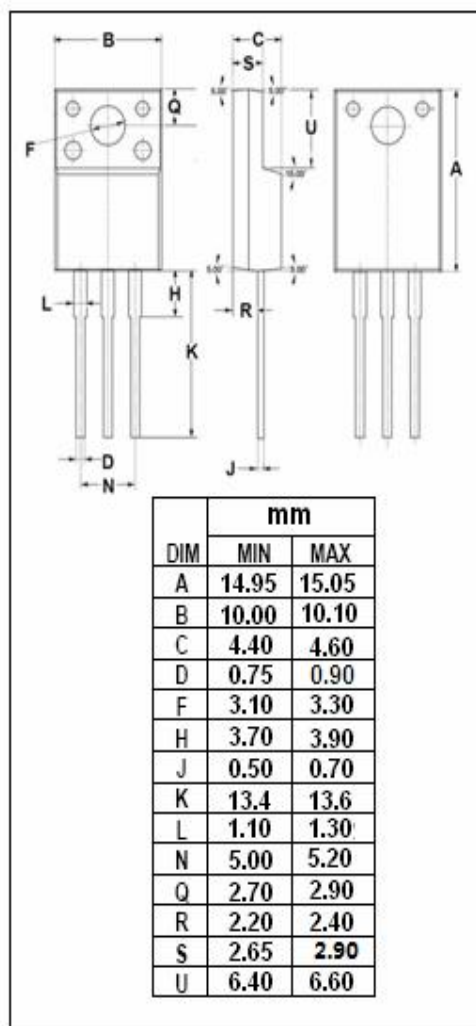
- Horizontal deflection output for TV

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	1500	V
V_{CEO}	Collector-Emitter Voltage	700	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current- Continuous	10	A
I_{CM}	Collector peak current ($t_p < 5\text{ms}$)	15	A
I_B	Base Current- Continuous	5	A
P_{TOT}	Total dissipation at $T_c=25^\circ\text{C}$	40	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	3.125	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)EBO}	Collector-base breakdown Voltage	I _C = 700mA; I _E = 0	10			V
V _{CE(sat)} ⁽¹⁾	Collector-Emitter Saturation Voltage	I _C = 5.0A; I _B =1.25A			2	V
V _{BE(sat)} ⁽¹⁾	Base-Emitter Saturation Voltage	I _C = 5.0A; I _B =1.25A			1.2	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 1500V ; I _E = 0 V _{CB} = 1500V ; I _E = 0 ,TC=125			0.2 2	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V ; I _C = 0	40		120	mA
h _{FE-1} ⁽¹⁾	DC Current Gain	I _C = 1A ; V _{CE} = 5V		18		
h _{FE-2} ⁽¹⁾	DC Current Gain	I _C = 5A ; V _{CE} = 1V		5		
h _{FE-3} ⁽¹⁾	DC Current Gain	I _C = 5A ; V _{CE} = 5V	5.5		7.5	
V _f	Diode forward voltage	I _F = 5A			1.6	v

Switching times

t _s	Inductive load Storage Time	I _{CP} = 4A , I _{B(on)} = 0.6A ; f _H = 16kHz V _{BE(off)} = -2.7V, L _{BB(off)} =4.5uH		2.5	3	μ s
t _f	Fall Time			0.3	0.6	μ s

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

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