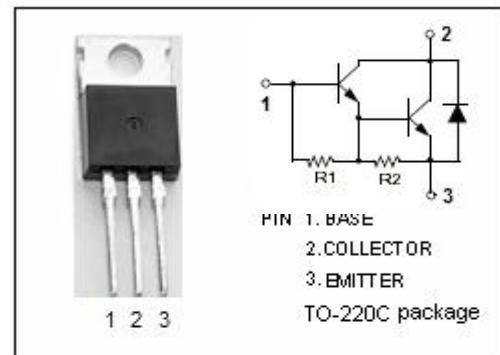


DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 400V$ (Min.)
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 2.0V$ (Max.)@ $I_C = 5A$

**APPLICATIONS**

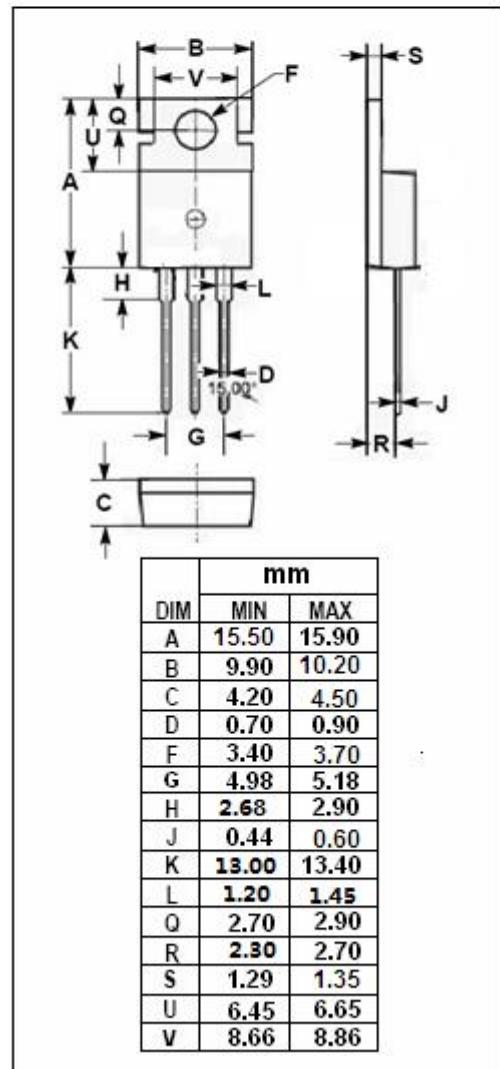
- Designed for use in automotive ignition, switching and motor control applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	400	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	7	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current- Continuous	1.5	A
P_c	Collector Power Dissipation $@T_c=25^\circ C$	80	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	1.56	$^\circ C/W$



SPTECH Product Specification

SPTECH Silicon NPN Darlington Power Transistor

TIP152

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(\text{BR})\text{CEO}}$	Collector-Emitter Breakdown Voltage	$I_C= 10\text{mA}, I_B= 0$	400			V
$V_{(\text{BR})\text{CBO}}$	Collector-Base Breakdown Voltage	$I_C= 1.0\text{mA}, I_E= 0$	400			V
$V_{\text{CE}(\text{sat})-1}$	Collector-Emitter Saturation Voltage	$I_C= 1\text{A}, I_B= 10\text{mA}$			1.5	V
$V_{\text{CE}(\text{sat})-2}$	Collector-Emitter Saturation Voltage	$I_C= 2\text{A}, I_B= 100\text{mA}$			1.5	V
$V_{\text{CE}(\text{sat})-3}$	Collector-Emitter Saturation Voltage	$I_C= 5\text{A}, I_B= 250\text{mA}$			2.0	V
$V_{\text{BE}(\text{sat})-1}$	Base-Emitter Saturation Voltage	$I_C= 2\text{A}, I_B= 100\text{mA}$			2.2	V
$V_{\text{BE}(\text{sat})-2}$	Base-Emitter Saturation Voltage	$I_C= 5\text{A}, I_B= 250\text{mA}$			2.3	V
V_F	C-E Diode Forward Voltage	$I_F= 7\text{A}$			3.5	V
I_{CEO}	Collector Cutoff current	$V_{\text{CE}}= 400\text{V}, I_B= 0$			0.25	mA
I_{EBO}	Emitter Cutoff Current	$V_{\text{EB}}= 8\text{V}; I_C= 0$			15	mA
$h_{\text{FE}-1}$	DC Current Gain	$I_C= 2.5\text{A}; V_{\text{CE}}= 5\text{V}$	150			
$h_{\text{FE}-2}$	DC Current Gain	$I_C= 5\text{A}; V_{\text{CE}}= 5\text{V}$	50			
$h_{\text{FE}-3}$	DC Current Gain	$I_C= 7\text{A}; V_{\text{CE}}= 5\text{V}$	15			
C_{OB}	Collector Output Capacitance	$I_E= 0; V_{\text{CB}}= 10\text{V}; f= 1\text{MHz}$			150	pF

Switching Times

t_d	Delay Time	$V_{\text{CC}} = 250\text{V}, I_C = 5.0 \text{ A}, I_{B1} = -I_{B2} = 250\text{mA}; t_p = 20 \mu\text{s}$ Duty Cycle $\leq 2\%$		0.03		μs
t_r	Rise Time			0.18		μs
t_{stg}	Storage Time			3.5		μs
t_f	Fall Time			1.6		μs

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