

DESCRIPTION

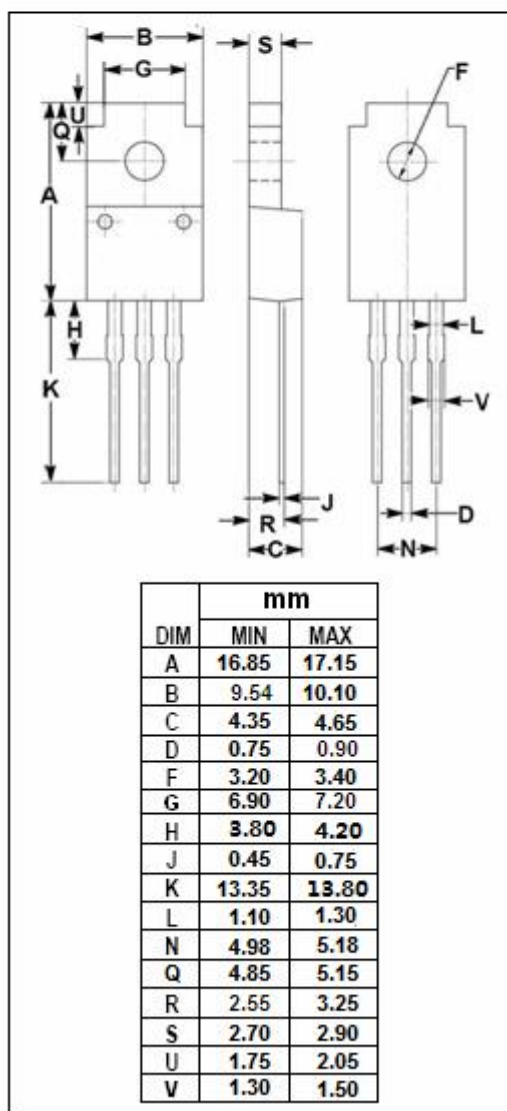
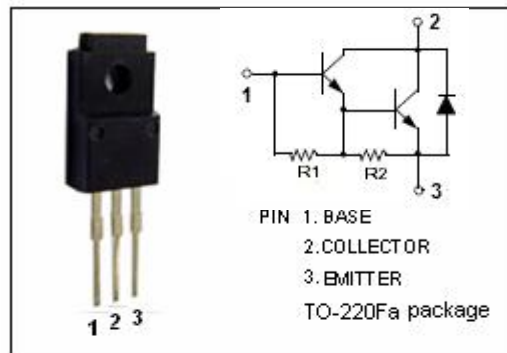
- High Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 400V(\text{Min})$
- High DC Current Gain
: $h_{FE} = 600(\text{Min}) @ I_C = 2A, V_{CE} = 2V$

APPLICATIONS

- Igniter applications
- High voltage switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	6	A
I_B	Base Current-Continuous	1	A
P_C	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	25	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



SPTECH Silicon NPN Darlington Power Transistor 2SD1409

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}$; $I_B=0$	400			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=4\text{A}$; $I_B=40\text{mA}$			2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=4\text{A}$; $I_B=40\text{mA}$			2.5	V
V_{ECF}	C-E Diode Forward Voltage	$I_F=4\text{A}$			3.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=600\text{V}$; $I_E=0$			0.5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}$; $I_C=0$			3.0	mA
h_{FE-1}	DC Current Gain	$I_C=2\text{A}$; $V_{CE}=2\text{V}$	600			
h_{FE-2}	DC Current Gain	$I_C=4\text{A}$; $V_{CE}=2\text{V}$	100			
C_{OB}	Output Capacitance	$I_E=0$; $V_{CB}=10\text{V}$; $f_{test}=1.0\text{MHz}$		35		pF

Switching times

t_{on}	Turn-on Time	$I_{B1}=I_{B2}=40\text{mA}$ $R_L=25\Omega$; $V_{CC}=100\text{V}$ $P_W=20\mu\text{s}$; Duty Cycle $\leq 1\%$		1.0		μs
t_{stg}	Storage Time			8.0		μs
t_f	Fall Time			5.0		μs