

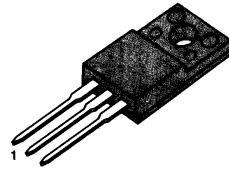
HIGH VOLTAGE SWITCH MODE APPLICATION

- High Speed Switching
- Suitable for Switching Regulator and Motor Control

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	700	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	9	V
Collector Current (DC)	I_C	12	A
Collector Current (Pulse)	I_C	24	A
Base Current	I_B	6	A
Collector Dissipation ($T_C=25^\circ\text{C}$)	P_C	50	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65 ~ 150	$^\circ\text{C}$

TO-220F



1 . Base 2. Collector 3. Emitter

ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
*Collector- Base Breakdown Voltage	V_{CEO} (sus)	$I_C = 10\text{mA}, I_B = 0$	400			V
Emitter- Base Breakdown Voltage	I_{EBO}	$V_{EB} = 7\text{V}, I_C = 0$			1	mA
*DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 5\text{A}$	8		40	
		$V_{CE} = 5\text{V}, I_C = 8\text{A}$	6		30	
*Collector Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C = 5\text{A}, I_B = 1\text{A}$			1	V
		$I_C = 8\text{A}, I_B = 1.6\text{A}$			1.5	V
		$I_C = 12\text{A}, I_B = 3\text{A}$			3	V
*Base Emitter Saturation Voltage	$V_{BE}(\text{sat})$	$I_C = 5\text{A}, I_B = 1\text{A}$			1.2	V
		$I_C = 8\text{A}, I_B = 1.6\text{A}$			1.6	V
Output Capacitance	C_{OB}	$V_{CB} = 10\text{V}, f = 0.1\text{MHz}$		180		pF
Current Gain Bandwidth Product	fT	$V_{CE} = 10\text{V}, I_C = 0.5\text{A}$	4			MHz
Turn On Time	t_{ON}	$V_{CC} = 125\text{V}, I_C = 8\text{A}$			1.1	μs
Storage Time	t_{STG}	$I_{B1} = I_{B2} = 1.6\text{A}$			3	μs
Fall Time	t_F				0.7	μs

* Pulse Test : $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

KSE13009F

NPN SILICON TRANSISTOR



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