



# HE13009

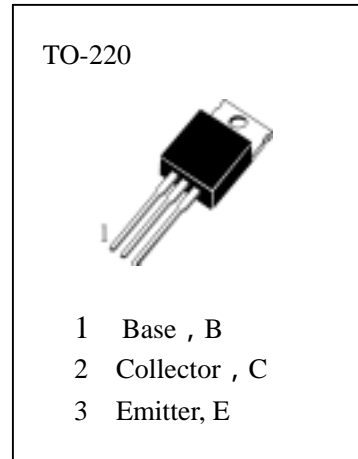
## HIGH VOLTAGE SWITCH MODE APPLICATIONS

High Speed Switching

Suitable for Switching Regulator and Motor Control

### ABSOLUTE MAXIMUM RATINGS ( $T_a=25$ )

$T_{stg}$ —Storage Temperature.....	-55~150
$T_j$ —Junction Temperature.....	150
$P_C$ —Collector Dissipation( $T_c=25$ ).....	100W
$V_{CBO}$ —Collector-Base Voltage.....	700V
$V_{CEO}$ —Collector-Emitter Voltage.....	400V
$V_{EBO}$ —Emitter-Base Voltage.....	9V
$I_C$ —Collector Current ( DC ) .....	12A
$I_B$ —Base Current.....	6A



### ELECTRICAL CHARACTERISTICS ( $T_a=25$ )

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
$V_{CEO}$	Collector-Emitter Breakdown Voltage	400			V	$I_C=10mA, I_B=0$
$I_{EBO}$	Emitter-Base Cut-off Current			1	mA	$V_{EB}=9V, I_C=0$
$H_{FE} ( 1 )$	DC Current Gain	8		40		$V_{CE}=5V, I_C=5A$
$H_{FE} ( 2 )$		6		30		$V_{CE}=5V, I_C=8A$
$V_{CE(sat)1}$	Collector- Emitter Saturation Voltage			1	V	$I_C=5A, I_B=1A$
$V_{CE(sat)2}$				1.5	V	$I_C=8A, I_B=1.6A$
$V_{CE(sat)3}$				3	V	$I_C=12A, I_B=3A$
$V_{BE(sat)1}$	Base-Emitter Saturation Voltage			1.2	V	$I_C=5A, I_B=1A$
$V_{BE(sat)2}$				1.6	V	$I_C=8A, I_B=1.6A$
$C_{ob}$	Output Capacitance		180		pF	$V_{CB}=10V, f=0.1MHz$
$f_T$	Current Gain-Bandwidth Product	4			MHz	$V_{CE}=10V, I_C=0.5A$
$t_{ON}$	Turn On Time			1.1	$\mu s$	} $V_{CC}=125V, I_C=8A,$ $I_{B1}=1.6A, I_{B2}=-1.6A$
$t_{STG}$	Storage Time			3	$\mu s$	
$t_F$	Fall Time			0.7	$\mu s$	