

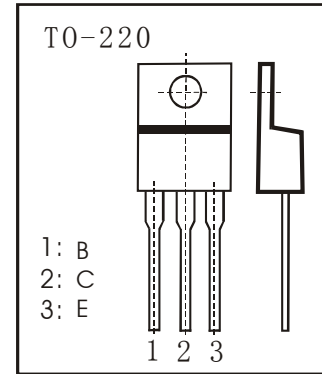
High power transistor—TSE13009

Applications

TSE13009 is a silicon NPN power transistor. The main process include energy-saving light, Electronic ballasts, high frequency switching power supply

Features

- High breakdown voltage, low leakage current
- High switching speed
- Low saturation voltage
- Package: TO-220
- Compatible: MJE13009, 3DD13009



Electrical Characteristics (TC=25° C unless otherwise noted)

Parameter	Symbol	Test conditions	Criteria			Unit
			Min	Type	Max	
Collector-base cut-off current	I_{CBO}	$V_{CB}=700V, I_E=0$			0.1	mA
Emitter-base cut-off current	I_{EBO}	$V_{EB}=9V, I_C=0$			0.1	mA
DC Current Gain	H_{FE}^a	$V_{CE}=5V, I_C=3A$	8		40	
Ratio of H_{FE1} and H_{FE2}	H_{FE1}/H_{FE2}	$H_{FE1}, V_{CE}=5V, I_C=5mA$ $H_{FE2}, V_{CE}=5V, I_C=3A$	0.7 5	0.9		
Collector-Emitter Saturation Voltage	V_{CE}^a	$I_C=8A, I_B=1.6A$			1.5	V
Base-Emitter Saturation Voltage	V_{BE}^a	$I_C=8A, I_B=1.6A$			1.6	V
Fall time	tf	$V_{CC}=125V, I_C=8A$ $I_{B1}=-I_{B2}=1.6A$			0.9	μS
Storage time	tg				4	μS
Transition frequency	f_T	$V_{CE}=10V, I_C=500 mA$ $f=1MHZ$	4			MHZ

a: pulse test :TP \leq 30 μ S, $\delta \leq$ 2%。

Absolute Maximum Ratings (TC=25° C unless otherwise noted)

Parameter		Symbol	Ratings	Unit
Collector-emitter breakdown voltage		V_{CE0}	400	V
Collector-base breakdown voltage		V_{CB0}	700	V
Emitter-base breakdown voltage		V_{EB0}	9	V
Collector current		I_C	12	A
Power dissipation	Ta=25°C	Ptot	2	W
	Tc=25°C		100	
Junction temperature		Tj	125	°C
Storage temperature		Tamb	-40~125	°C