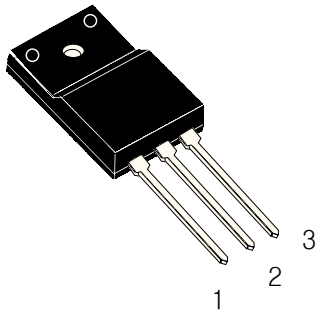
High Voltage Switch Mode Application

◇ High Speed Switching

◇ Suitable for Switching Regulator and Motor Control

TO-220F



1. Base
2. Collector
3. Emitter

ABSOLUTE MAXIMUM RATINGS (Ta=25℃)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	700	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base voltage	V_{EBO}	9	V
Collector Current	I_C	12	A
Base Current	I_B	6	A
Collector Power Dissipation	P_C	50	W
Junction Temperature	Tj	150	℃
Storage Temperature	Tstg	-65~ +150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃, unless otherwise specified)

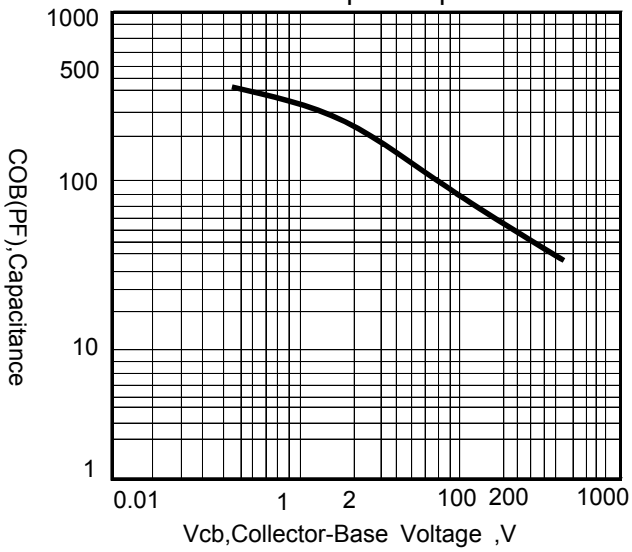
Characteristic	Symbol	Test Condition	Min	TYP	MAX	Unit
*Collector-emitter Sustaining voltage	$BV_{CEO(sus)}$	I_C=10mA ,I_B=0	400			V
Emitter cut-off current	I_{EBO}	V_{EB}= 9V ,I_C=0			1	mA
*DC current gain	#$h_{FE(1)}$ $h_{FE(1)}$	V_{CE}=5V , I_C=5A V_{CE}=5V , I_C=8A	8 5		40 30	
*Collector-emitter saturation voltage	V_{CE}(sat)	I_C=5A, I_B=1A I_C=8A, I_B=1.6A I_C=12A, I_B=3A			1 1.5 3	V
*Base-emitter saturation voltage	V_{BE}(sat)	I_C=5A, I_B=1A I_C=8A, I_B=1.6A			1.2 1.6	V
Output Capacitance	C_{OB}	V_{CB}=10V,,f=0.1MHZ			2.0	V
Current Gain Bandwidth Product	fT	V_{CE}=10V, I_C=0.5A	4.0			MHZ
Turn On Time	t_{ON}	Vcc=125V,Ic=8A I_{B1}=-I_{B2}=1.6A			1.1	μ S
Storage Time	t_S				3	μ S
Fall Time	t_f				0.7	μ S

* Pulse test:PW≤ 300us,Duty cycle≤ 2%

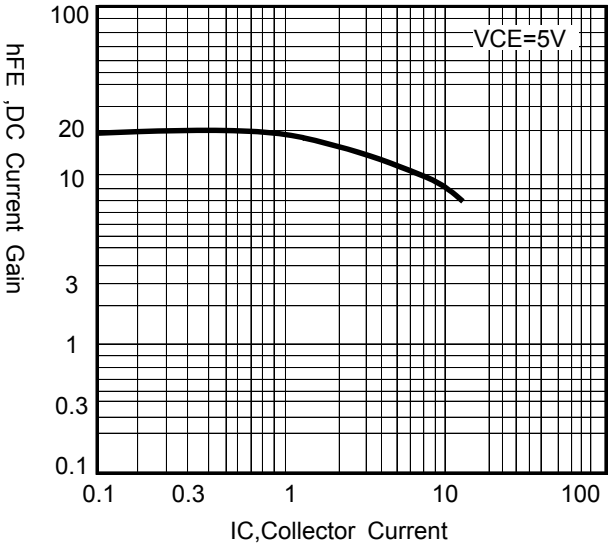
hFE(1) Classification

Classification	H1	H2	H3
h_{FE}	8~17	15~28	26~40

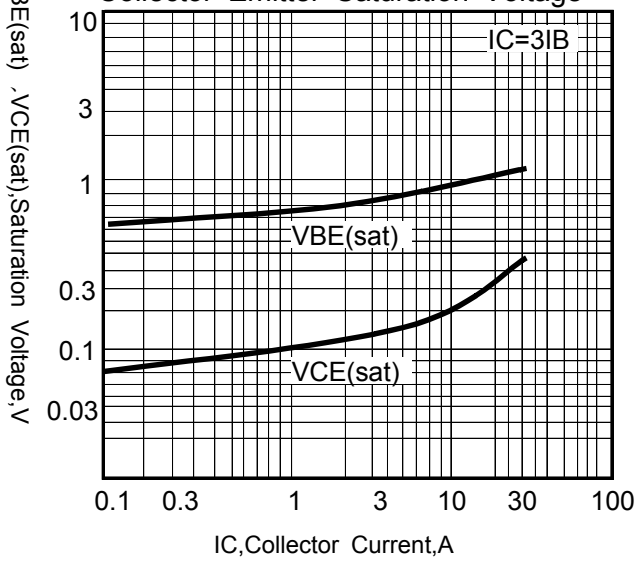
Collector Output Capacitance



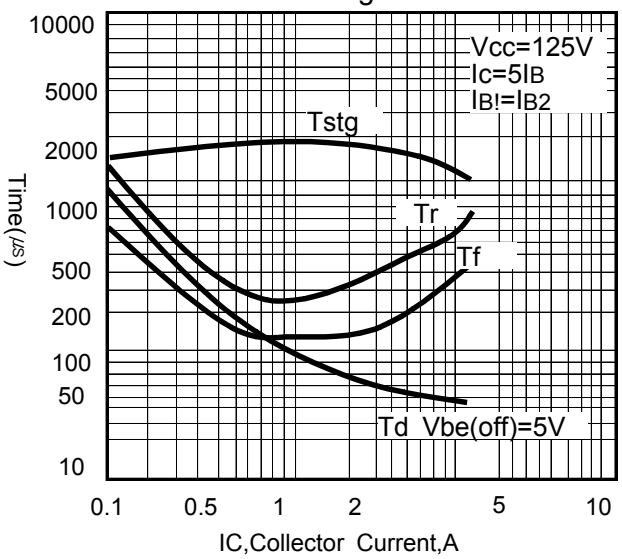
DC Current Gain



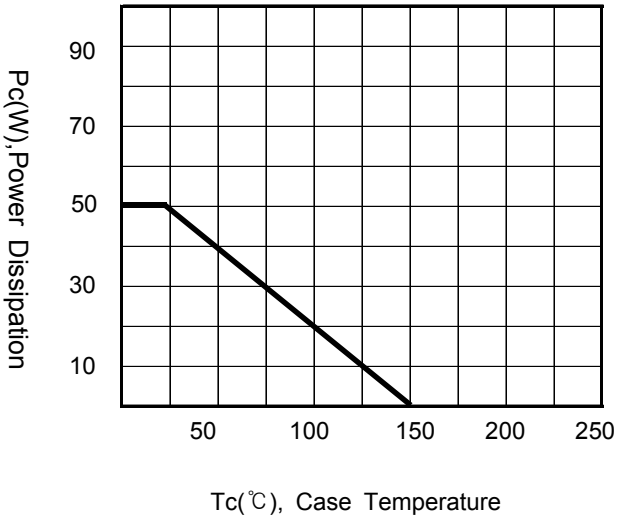
Base Emitter Saturation Voltage
Collector Emitter Saturation Voltage



Switching Time



Power Derating



Safe Operating Area