

Features

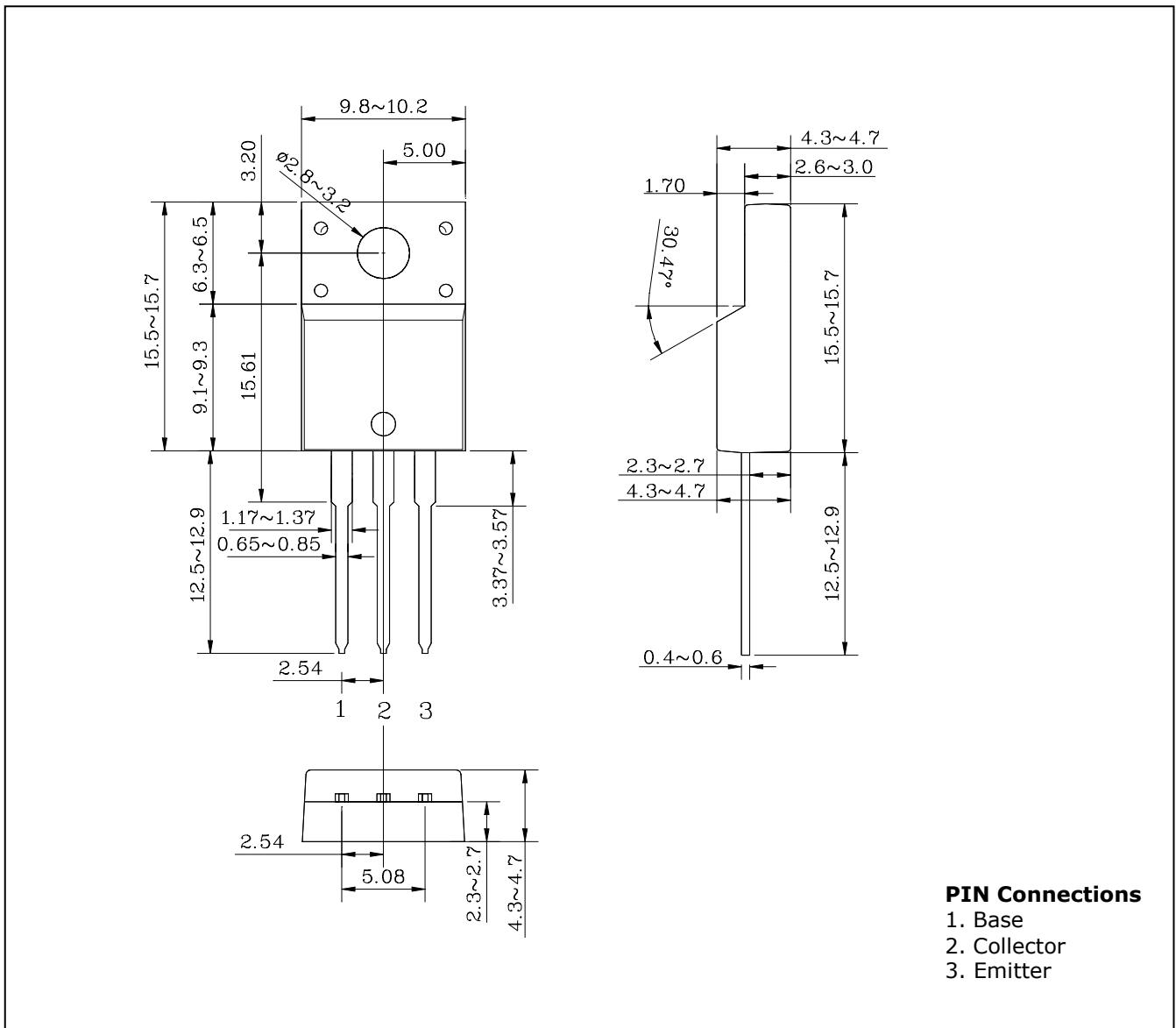
- High speed switching
- High Collector Voltage : $V_{CBO} = 700V$
- Suitable for Switching Regulator and Motor Control

Ordering Information

Type NO.	Marking	Package Code
STD13007F	STD13007	TO-220F

Outline Dimensions

unit : mm



Absolute maximum ratings

(Ta=25°C)

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	8	A
Collector current (Pulse)	I_{CM}	16	A
Base current (DC)	I_B	4	A
Collector Power dissipation (Tc=25°C)	P_C	40	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55~150	°C

Electrical Characteristics

(Ta=25°C)

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}^*	$I_C=2A, V_{CE}=5V$	8	-	60	
		$I_C=5A, V_{CE}=5V$	5	-	30	
Collector-Emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=2A, I_B=0.4A$	-	-	1	V
		$I_C=5A, I_B=1A$	-	-	2	
		$I_C=8A, I_B=2A$	-	-	3	
Base-Emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=2A, I_B=0.4A$	-	-	1.2	V
		$I_C=5A, I_B=1A$	-	-	1.6	
Transition frequency	f_T	$V_{CE}=10V, I_C=0.5A, f=1MHz$	-	14	-	MHz
Output capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=0.1MHz$	-	80	-	pF
Turn on Time	t_{on}	$V_{CC}=125V, I_C=5A$ $I_{B1}=-I_{B2}=1A$	-	-	1.6	μs
Storage Time	t_{stg}		-	-	3	
Fall Time	t_f		-	-	0.7	

* Pulse test: $PW \leq 300 \mu s$, Duty cycle $\leq 2\%$.

Electrical Characteristic Curves

Fig. 1 $P_C - T_C$

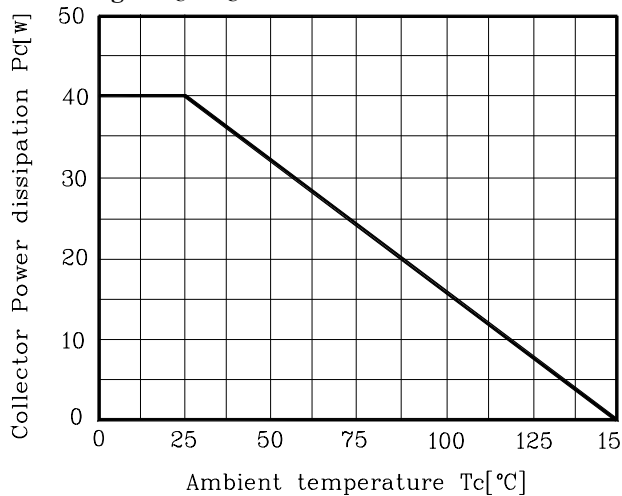


Fig. 2 $V_{BE(sat)}, V_{CE(sat)} - I_C$

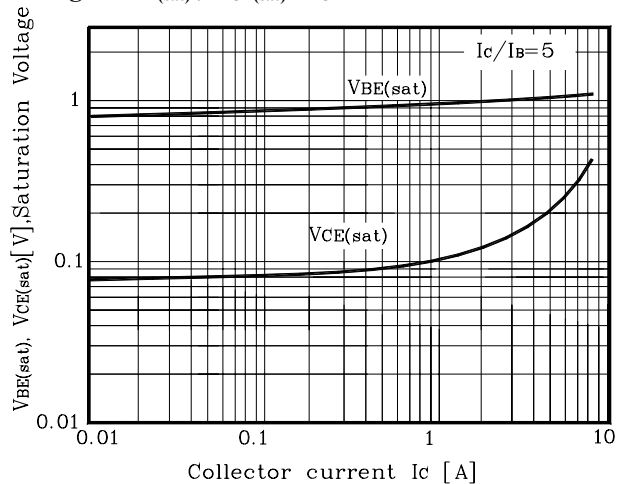


Fig. 3 $h_{FE} - I_C$

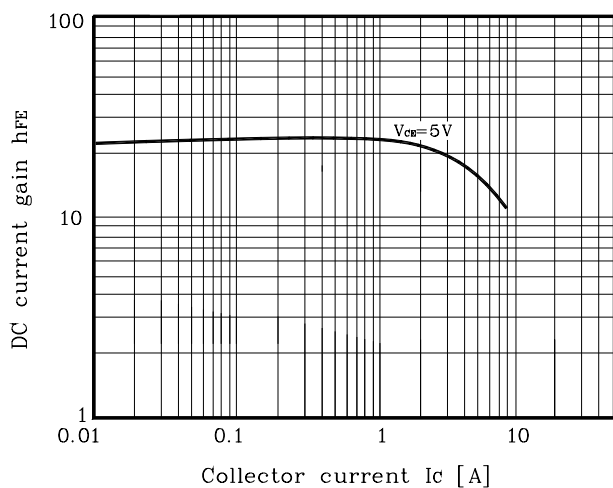


Fig. 4 $t_r, t_{stg} - I_C$

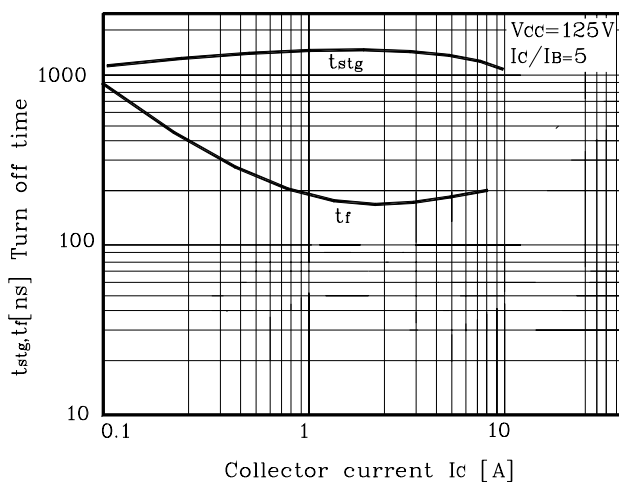


Fig. 5 $t_d, t_r - I_C$

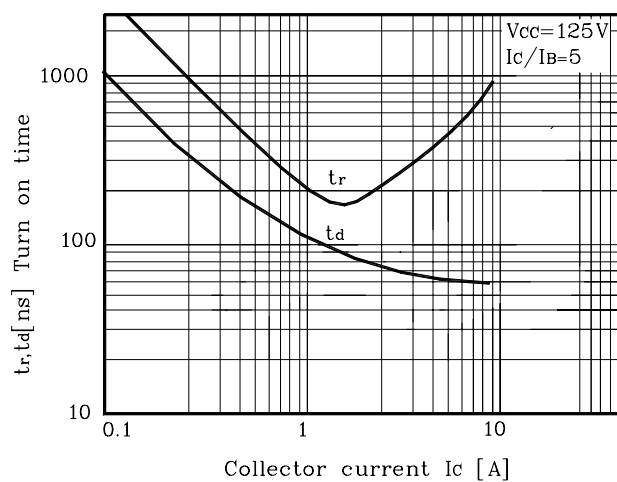
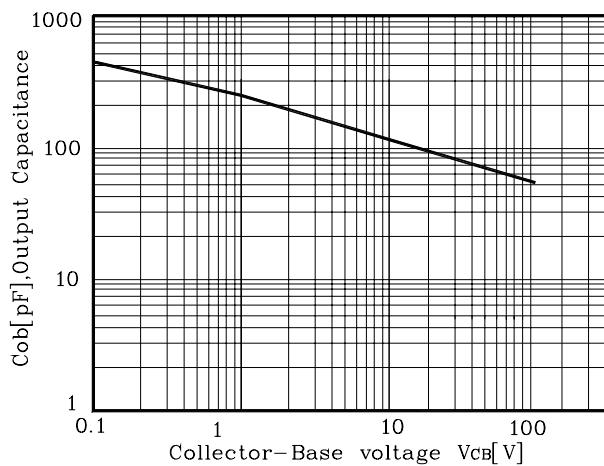
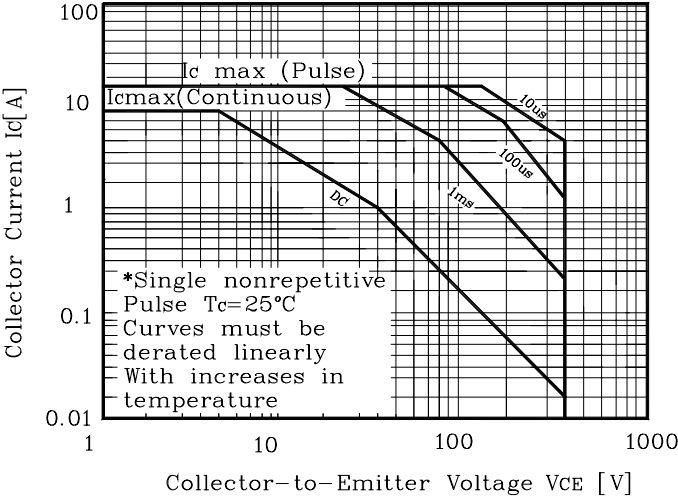


Fig. 6 $C_{ob} - V_{CB}$



www.Datasheet4U.com Fig.7 Safe Operating Area



These AUK products are intended for usage in general electronic equipments(Office and communication equipment, measuring equipment, domestic electrification, etc.).

Please make sure that you consult with us before you use these AUK products in equipments which require high quality and/or reliability, and in equipments which could have major impact to the welfare of human life(atomic energy control, airplane, spaceship, traffic signal, combustion central, all types of safety device, etc.).

AUK cannot accept liability to any damage which may occur in case these AUK products were used in the mentioned equipments without prior consurtation with AUK.