

Applications

- Power amplifier application
- High current switching application

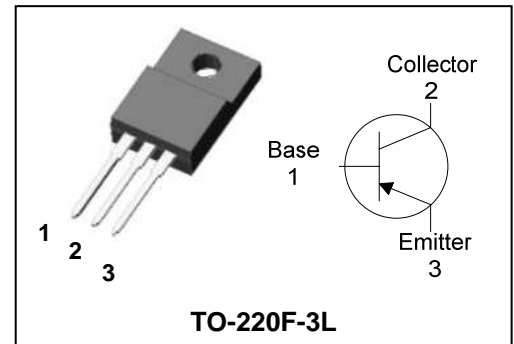
Features

- Low saturation voltage
: $V_{CE(sat)} = -0.15V$ Typ. @ $I_C = -1A$, $I_B = -50mA$
- Large collector current capacity: $I_C = -3A$
- TO-220F-3L DIP type package

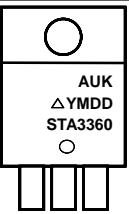
Ordering Information

Type NO.	Marking	Package Code
STA3360PI	STA3360	TO-220F-3L

PIN Connection



Marking Diagram

	Column 1 : Manufacturer Column 2 : Production Information - Δ : Factory Management Code - YMDD : Date Code (Year, Month, Date) Column 3 : Device Code
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Absolute Maximum Ratings

[Ta=25°C]

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-60	V
Collector-emitter voltage	V_{CEO}	-60	V
Emitter-base voltage	V_{EBO}	-6	V
Collector current	I_C	-3	A(DC)
	I_{CP}^*	-6	A(Pulse)
Collector Power dissipation($T_C = 25^\circ C$)	P_C	15	W
Junction temperature	T_J	150	°C
Storage temperature range	T_{stg}	-55~ 150	°C

 * : Single pulse, $t_p = 300 \mu s$

Characteristic	Symbol	Typ.	Max	Unit	
Thermal resistance	Junction-case	$R_{th(J-C)}$	-	8.33	°C/W
	Junction-ambient	$R_{th(J-a)}$	-	62.5	

Electrical Characteristics

[Ta=25°C]

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage		BV_{CEO}	$I_C = -1\text{mA}, I_B = 0$	-60	-	-	V
Collector cut-off current		I_{CBO}	$V_{CB} = -60\text{V}, I_E = 0$	-	-	-1	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = -6\text{V}, I_C = 0$	-	-	-1	μA
DC current gain		h_{FE}	$V_{CE} = -2\text{V}, I_C = -0.5\text{A}^*$	120	-	240	-
		h_{FE}	$V_{CE} = -2\text{V}, I_C = -2\text{A}^*$	40	-	-	
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = -1\text{A}, I_B = -0.05\text{A}^*$	-	-	-0.35	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = -2\text{A}, I_B = -0.1\text{A}^*$	-	-0.97	-1.2	V
Transition frequency		f_T	$V_{CE} = -10\text{V}, I_C = -0.05\text{A}$	-	160	-	MHz
Collector output capacitance		C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$	-	60	-	pF
Switching Time	Turn-on Time	t_{on}		-	170	-	ns
	Storage Time	t_{stg}		-	620	-	
	Fall Time	t_f		-	50	-	

*: Pulse test : $t_p \leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

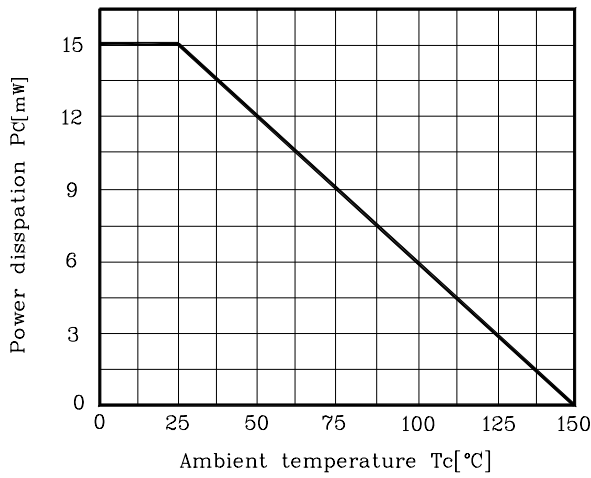


Fig. 2 $I_C - V_{BE(ON)}$

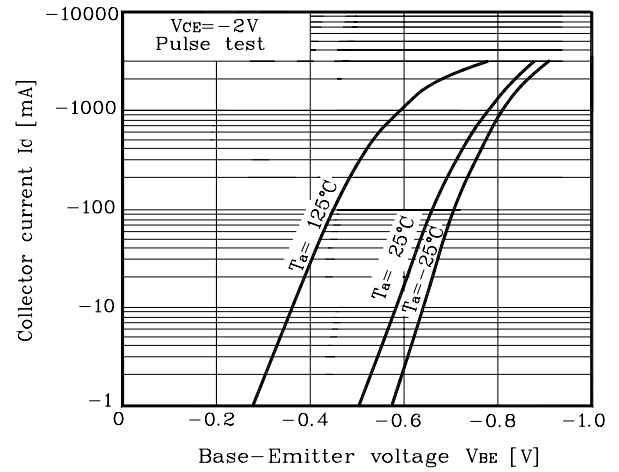


Fig. 3 $I_C - V_{CE}$

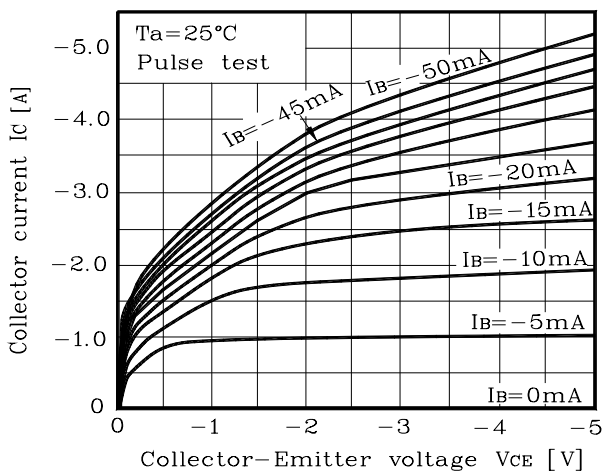


Fig. 4 $h_{FE} - I_C$

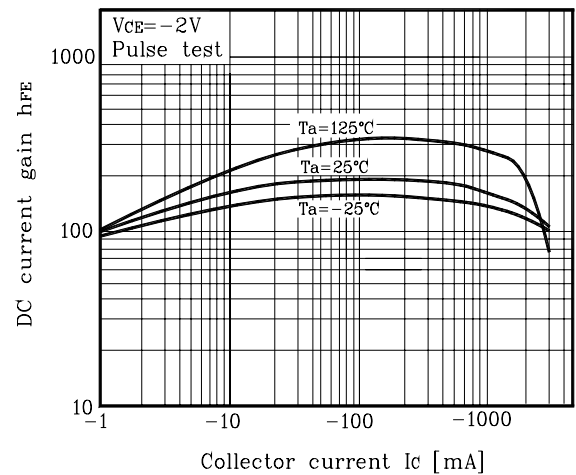


Fig. 5 $V_{CE(sat)} - I_C$

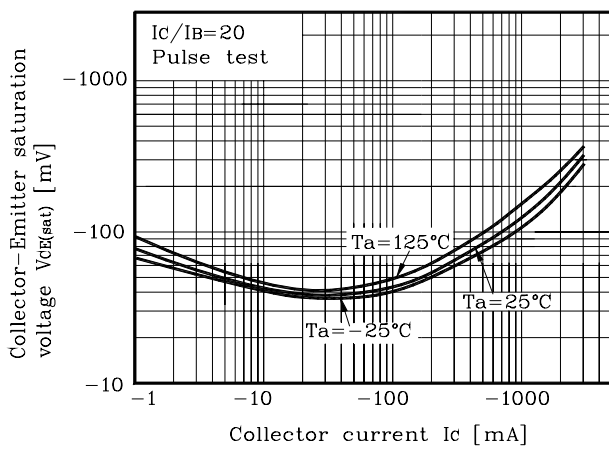
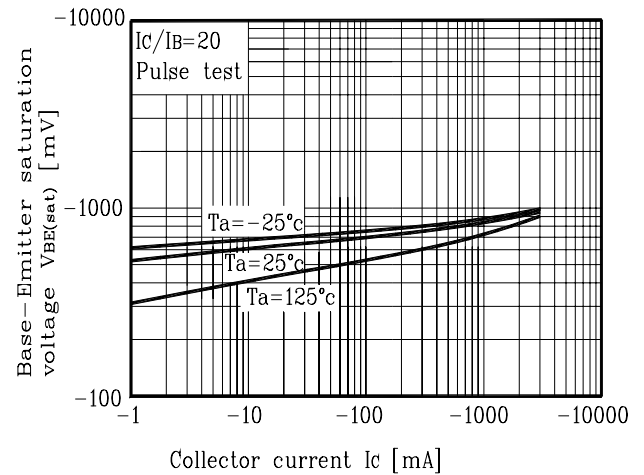


Fig. 6 $V_{BE(sat)} - I_C$



Electrical Characteristic Curves

Fig. 7 $C_{ob} - V_{CB}$

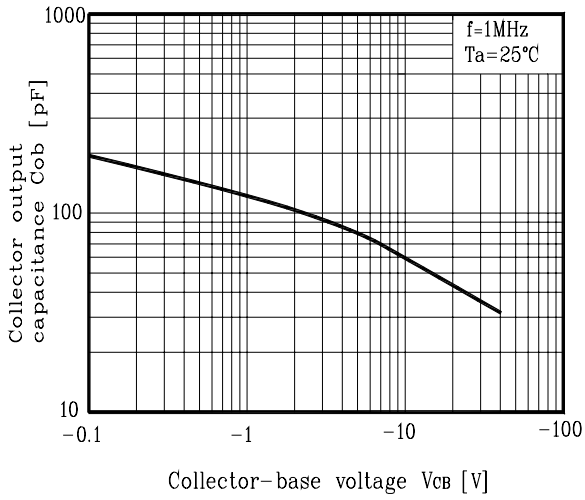
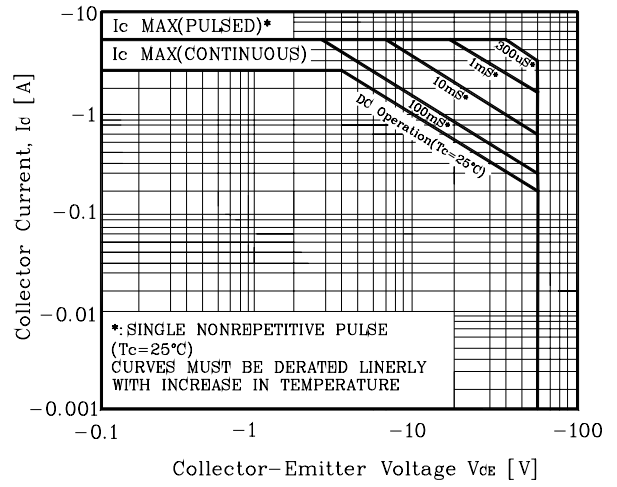
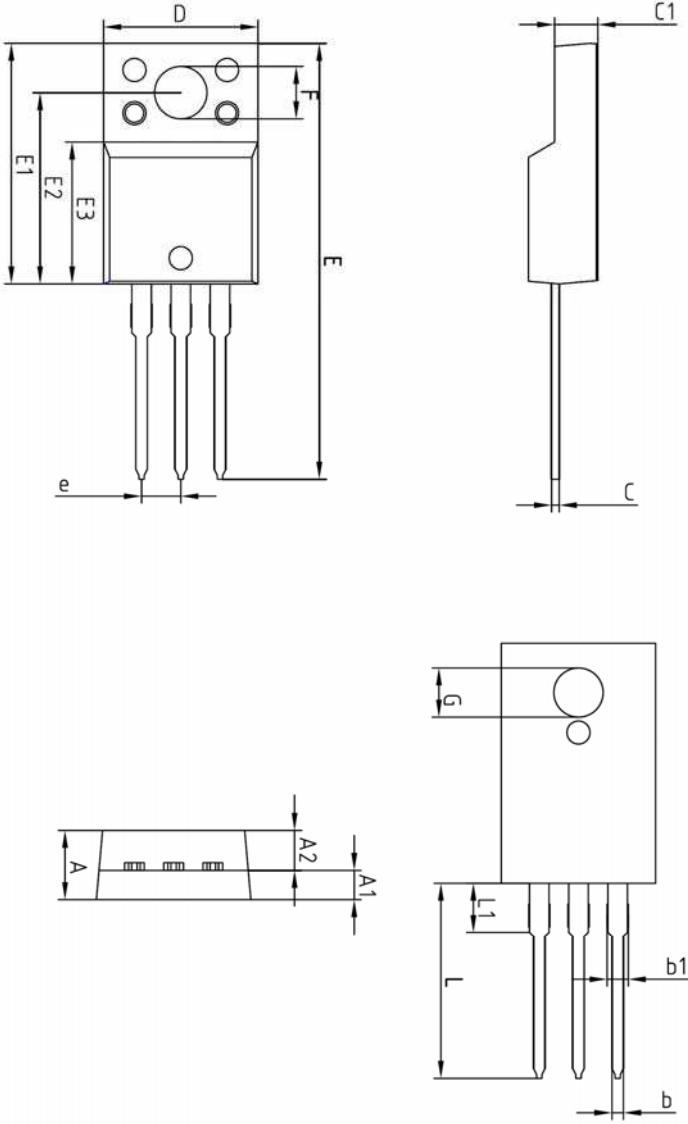


Fig. 8 Safe Operating Area



Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	-	-	4.60	
A1	2.45	2.50	2.55	
A2	1.95	2.00	2.05	
b	0.65	0.75	0.85	
b1	1.07	1.27	1.47	
C	0.40	0.50	0.60	
C1	2.70	2.80	2.90	
D	9.90	10.00	10.10	
E	28.00	-	28.60	
E1	15.50	15.60	15.70	
E2	12.30	12.40	12.50	
E3	9.15	9.20	9.25	
F	3.30	3.40	3.50	
G	3.10	3.20	3.30	
e	2.54 BSC			
L	12.40	-	13.00	
L1	3.46 BSC			

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