

Silicon NPN Power Transistors

2SD612 2SD612K

DESCRIPTION

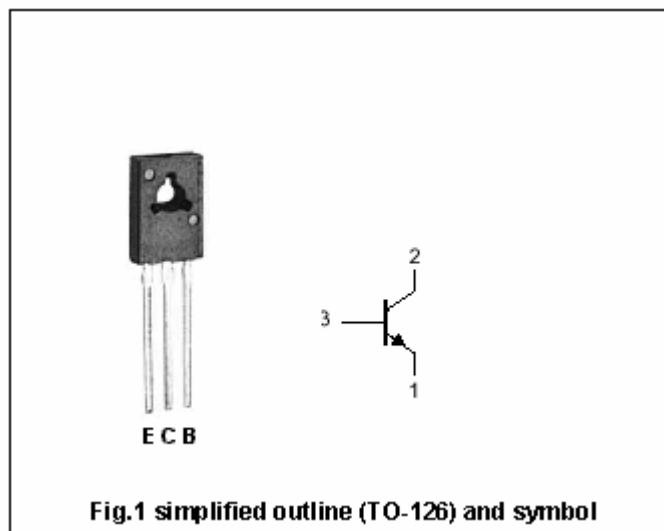
- With TO-126 package
- Complement to type 2SB632/632K
- High collector dissipation
- Wide area of safe operation

APPLICATIONS

- 25V/35V, 2A low-frequency power amplifier applications

PINNING

PIN	DESCRIPTION
1	Emitter
2	Collector;connected to mounting base
3	Base

Absolute maximum ratings($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	2SD612	25	V
		2SD612K	35	
V_{CEO}	Collector-emitter voltage	2SD612	25	V
		2SD612K	35	
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current (DC)		2	A
I_{CM}	Collector current-peak		3	A
P_D	Total power dissipation	$T_a=25^\circ\text{C}$	1	W
		$T_C=25^\circ\text{C}$	10	
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

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CHARACTERISTICS

T_j=25°C unless otherwise specified

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V _{(BR)CEO}	Collector-emitter breakdown voltage	2SD612	I _C =1mA; R _{BE} =∞	25			V
		2SD612K		35			
V _{(BR)CBO}	Collector-base breakdown voltage	2SD612	I _C =10μA; I _E =0	25			V
		2SD612K		35			
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =10μA; I _C =0	5			V	
V _{CEsat}	Collector-emitter saturation voltage	I _C =1.5A; I _B =0.15A		0.3	0.8	V	
V _{BEsat}	Base-emitter saturation voltage	I _C =1.5A; I _B =0.15A		1.1	1.5	V	
I _{CBO}	Collector cut-off current	V _{CB} =20V; I _E =0			1	μA	
I _{EBO}	Emitter cut-off current	V _{EB} =4V; I _C =0			1	μA	
h _{FE-1}	DC current gain	I _C =0.5A; V _{CE} =2V	60		320		
h _{FE-2}	DC current gain	I _C =1.5A; V _{CE} =2V	30				
f _T	Transition frequency	I _C =50mA; V _{CE} =10V		100		MHz	
C _{OB}	Collector output capacitance	f=1MHz; V _{CB} =10V		30		pF	

Switching times

t _{on}	Turn-on time	I _C =500mA; V _{CE} =12V I _{B1} =-I _{B2} =50mA		0.05		μs
t _f	Fall time			0.10		μs
t _{stg}	Storage time			0.40		μs

◆ h_{FE-1} Classifications

D	E	F
60-120	100-200	160-320

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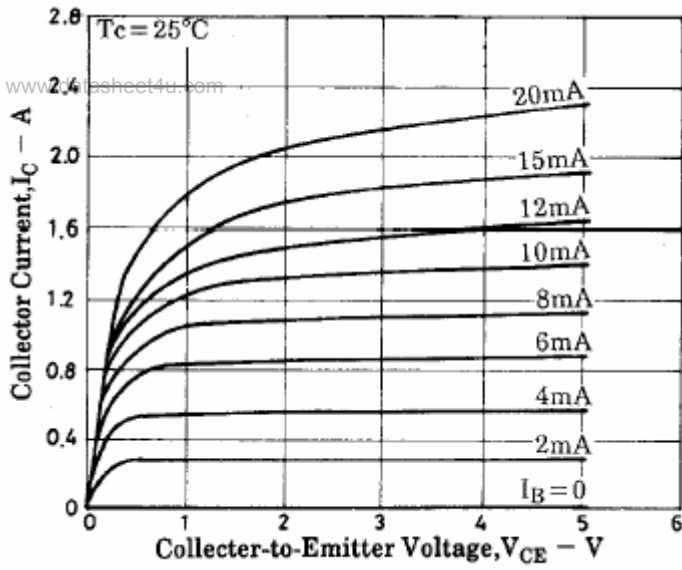


Fig.3 Static Characteristic

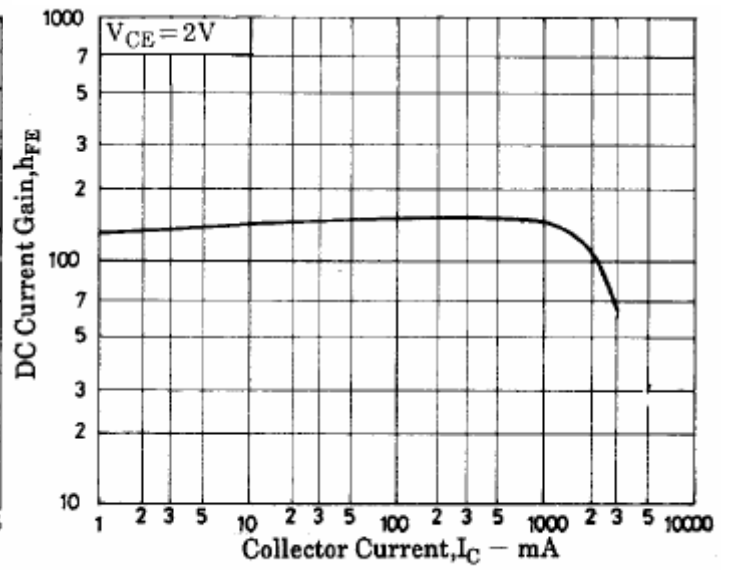


Fig.4 DC current Gain

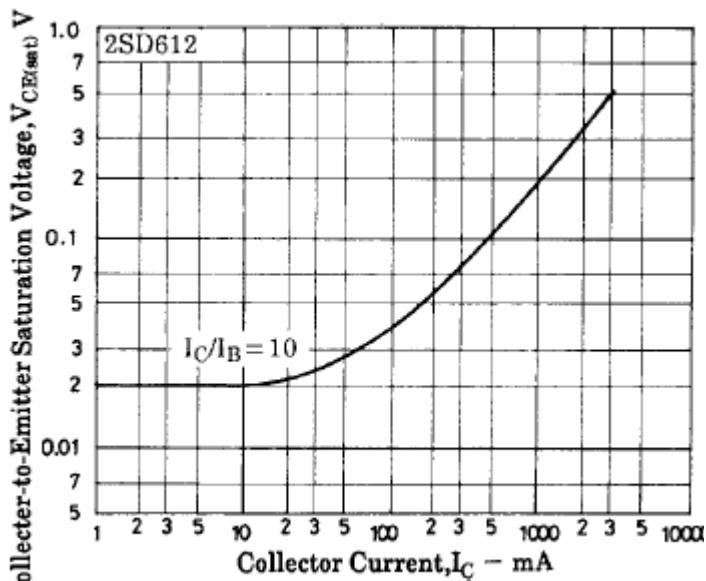


Fig.5 Collector-Emitter Saturation Voltage

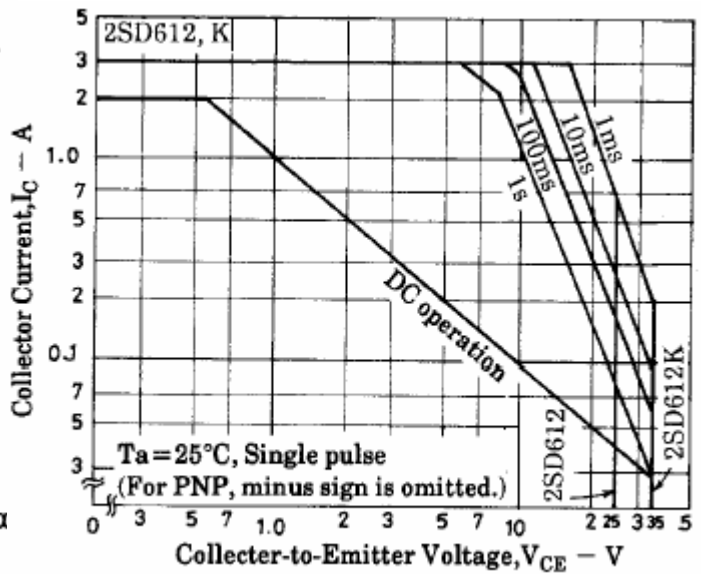


Fig.6 Safe Operating Area