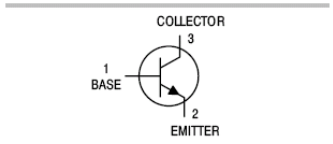
Power Transistor 2SD1864

FEATURES

- Low $V_{CE(sat)}$.
  $V_{CE(sat)}$=0.5V(Typ.)
  (I_C/I_B=2A/0.2A)
- Complements the 2SB1184.

Lead-free



TO-251

APPLICATIONS

- Epitaxial planar type.
- NPN silicon transistor.

MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Volage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current(DC)	3	A
I_{CP}	Collector Current(Pulse)	4.5	A
I_B	Base Current	1	A
P_C	Collector Power Dissipation	1.5	W
T_j ,T_{stg}	Junction and Storage temperature range	-55 to +150	℃

Power Transistor 2SD1864

ELECTRICAL CHARACTERISTICS@ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V_{CBO}	I_C=50uA,I_E=0	60			V
Collector-emitter breakdown voltage	V_{CEO}	I_C=1mA,I_B=0	50			V
Emitter-base breakdown voltage	V_{EBO}	I_E=50uA,I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=40V,I_E=0			1.0	uA
Emitter cut-off current	I_{EBO}	V_{EBO}=4V,I_C=0			1.0	uA
DC current gain	h_{FE}	V_{CE}=3V,I_C=0.5A	82		390	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C/I_B =2A/0.2A		0.5	1.0	V
Transition frequency	f_T	V_{CE}=5V,I_E=-500mA f=30MHz		90		MHz
Collector output capacitance	C_{ob}	V_{CB}=10V,I_E=0,f=1MHz		40		pF

CLASSIFICATION OF $h_{FE(1)}$

Rank	P	Q	R
Range	82-180	120-270	180-390

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

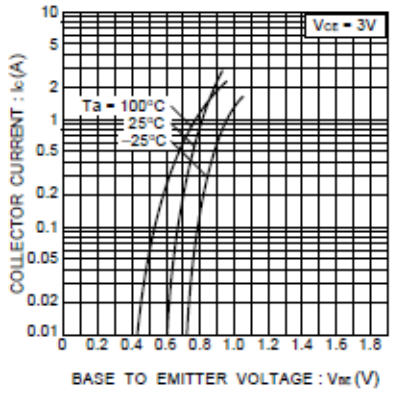


Fig.1 Grounded emitter propagation characteristics

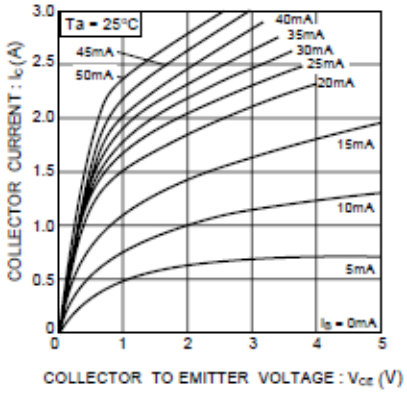


Fig.2 Grounded emitter output characteristics (I)

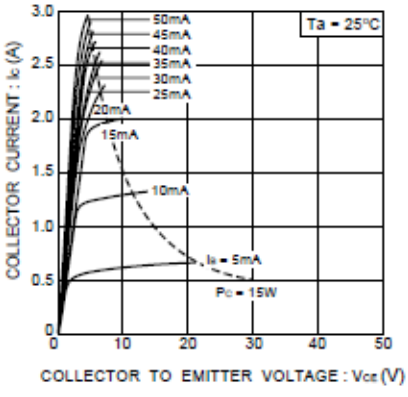


Fig.3 Grounded-emitter output characteristics(II)

Power Transistor 2SD1864

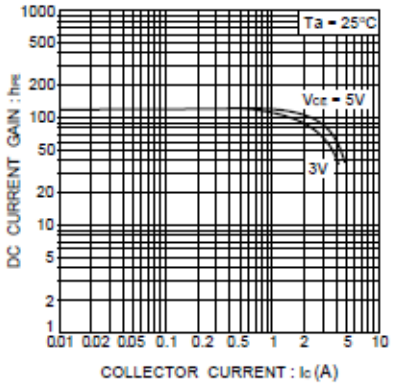


Fig.4 DC current gain vs. collector current(I)

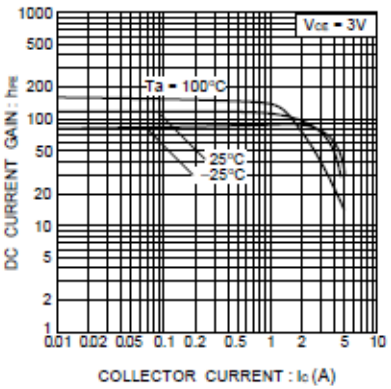


Fig.5 DC current gain vs. collector curren(II)

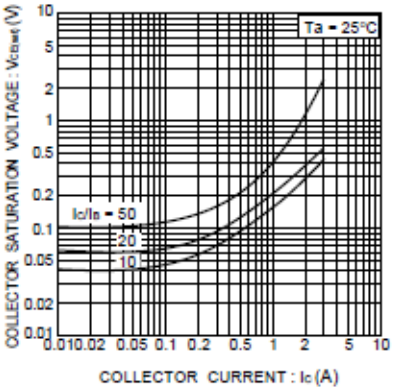


Fig.6 Collector-emitter saturation voltage vs. collector current

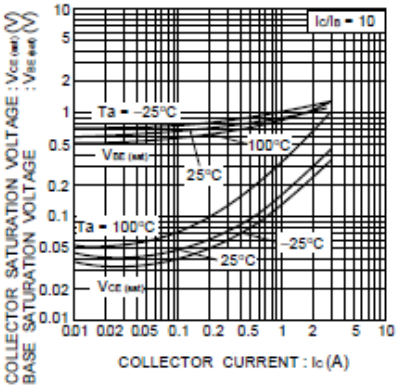


Fig.7 Collector-emitter saturation voltage vs. collector current
Base-emitter saturation voltage vs. collector current

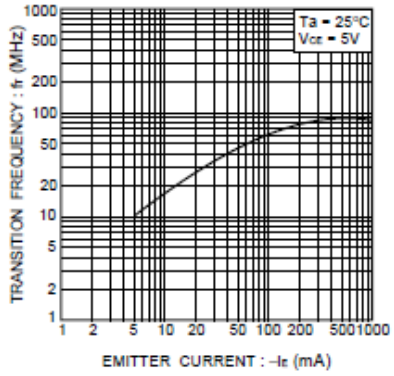


Fig.8 Gain bandwidth product vs. emitter current

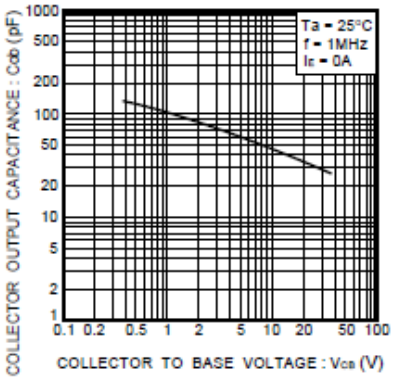


Fig.9 Collector output capacitance vs. collector-base voltage

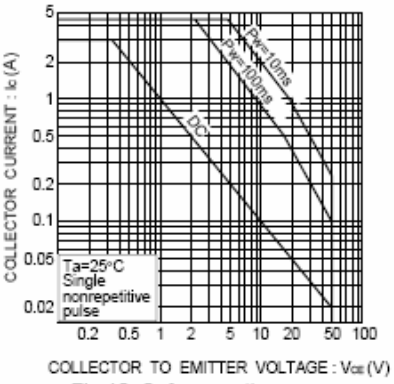


Fig.10 Safe operating area

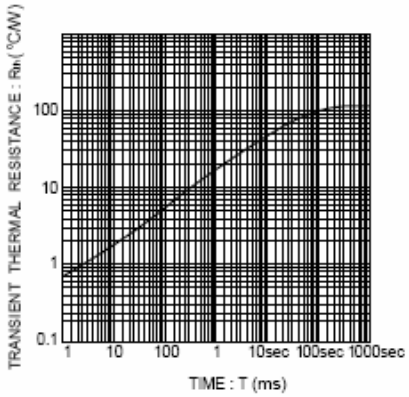


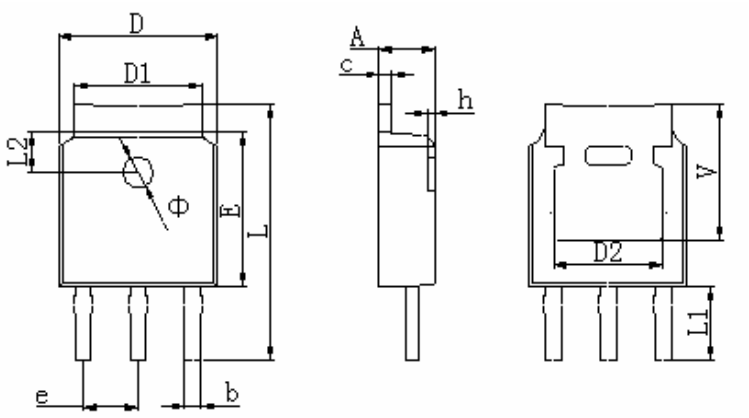
Fig.11 Transient thermal resistance

Power Transistor 2SD1864

PACKAGE OUTLINE

Plastic surface mounted package

TO-251



TO-251		
A	2.200	2.400
b	0.500	0.700
c	0.460	0.580
D	6.500	6.700
D1	5.100	5.460
D2	4.830 Typ.	
E	6.000	6.200
e	2.186	2.386
L	12.000	12.600
L1	5.100 Typ.	
L2	1.400	1.700
Φ	1.100	1.300
h	0.000	0.300
V	5.350 Typ.	
All Dimensions in mm		

PACKAGE INFORMATION

Device	Package	Shipping
2SD1864	TO-251	80PCS/Tube