

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

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

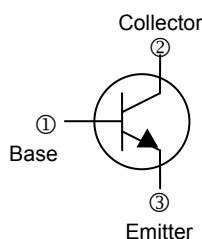
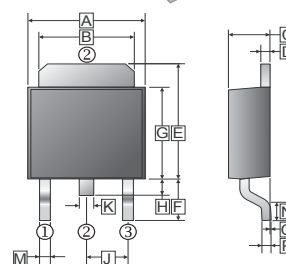
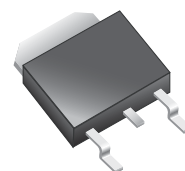
CLASSIFICATION OF h_{FE}

Product-Rank	2SD1760-P	2SD1760-Q	2SD1760-R
Range	82~180	120~270	180~390

PACKAGE INFORMATION

Package	MPQ	Leader Size
TO-252	2.5K	13' inch

D-Pack (TO-252)



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.4	6.8	J	2.30 REF.	
B	5.20	5.50	K	0.70	0.90
C	2.20	2.40	M	0.50	1.1
D	0.45	0.58	N	0.9	1.6
E	6.8	7.3	O	0	0.15
F	2.40	3.0	P	0.43	0.58
G	5.40	6.2			
H	0.8	1.20			

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	50	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current -Continuous	I_C	3	A
Collector Power Dissipation	P_C	1.5	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{STG}	-55 ~ 150	$^\circ C$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-base breakdown voltage	$V_{(BR)CBO}$	60	-	-	V	$I_C=50\mu A, I_E=0$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	50	-	-	V	$I_C=1mA, I_B=0$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	5	-	-	V	$I_E=50\mu A, I_C=0$
Collector cut-off current	I_{CBO}	-	-	1	μA	$V_{CB}=40V, I_E=0$
Emitter cut-off current	I_{EBO}	-	-	1	μA	$V_{EB}=4V, I_C=0$
DC current gain	h_{FE}	82	-	390		$V_{CE}=3V, I_C=500mA$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	1	V	$I_C=2A, I_B=200mA$
Transition frequency	f_T	-	90	-	MHz	$V_{CE}=5V, I_C=500mA, f=30MHz$
Collector Output Capacitance	C_{OB}	-	40	-	pF	$V_{CB}=10V, I_E=0, f=1MHz$

CHARACTERISTIC CURVES

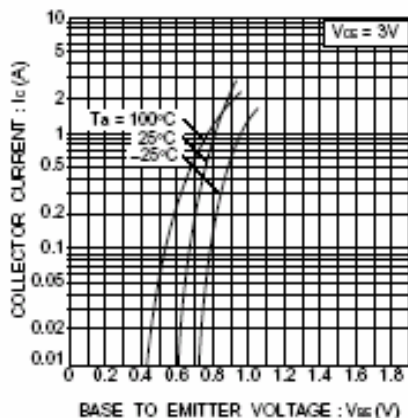


Fig.1 Grounded emitter propagation characteristics

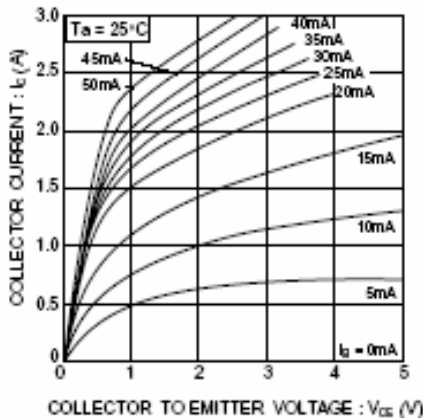


Fig.2 Grounded emitter output characteristics (I)

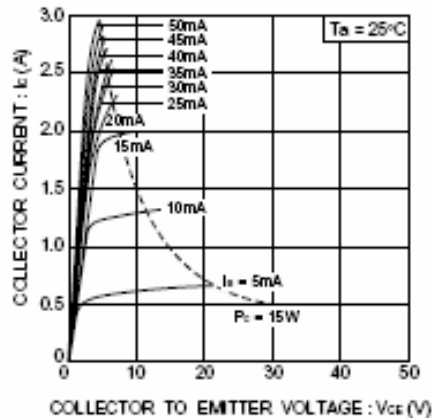


Fig.3 Grounded-emitter output characteristics(II)

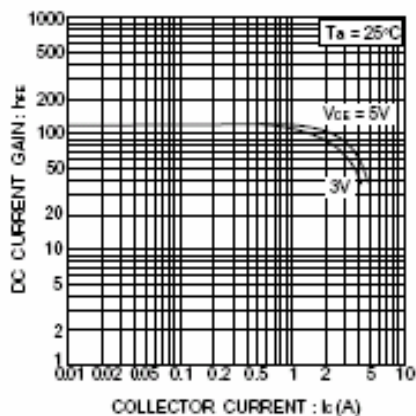


Fig.4 DC current gain vs. collector current(I)

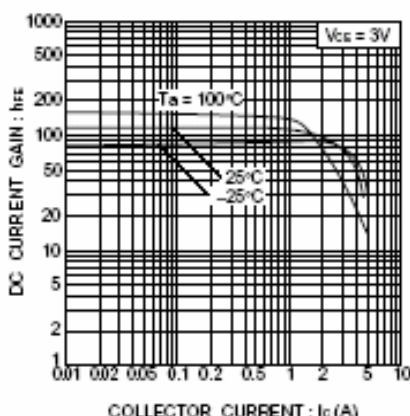


Fig.5 DC current gain vs. collector current(II)

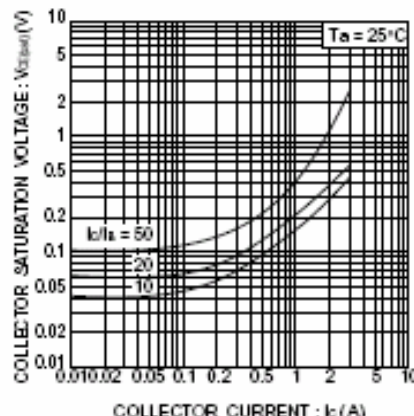


Fig.6 Collector-emitter saturation voltage vs. collector current

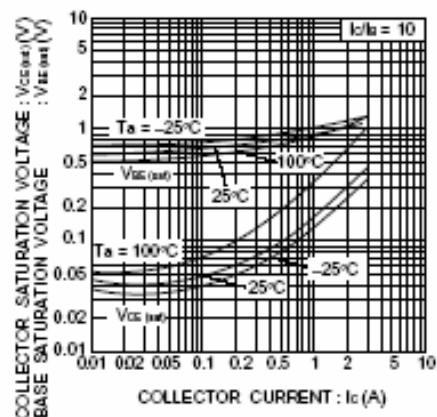


Fig.7 Collector-emitter saturation voltage vs. collector current
Base-emitter saturation voltage vs. collector current

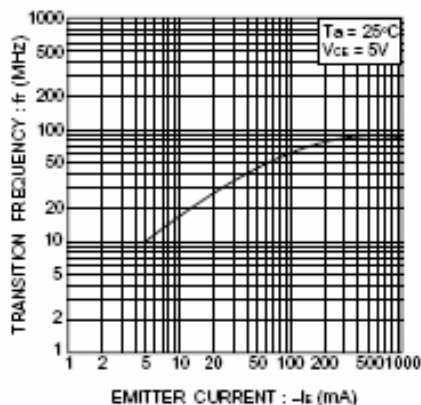


Fig.8 Gain bandwidth product vs. emitter current

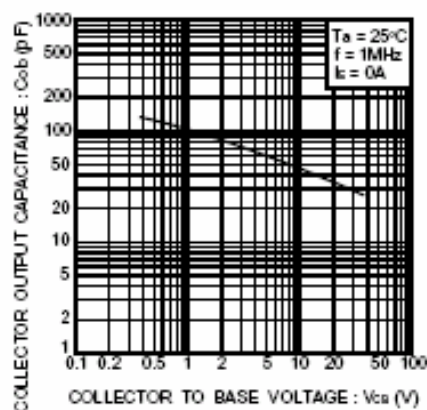


Fig.9 Collector output capacitance vs. collector-base voltage

CHARACTERISTIC CURVES

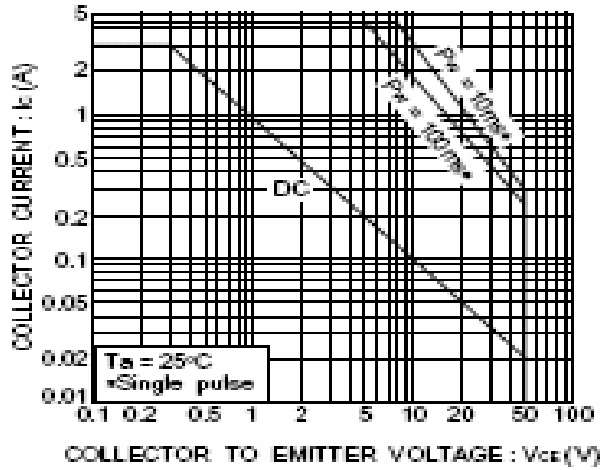


Fig.10 Safe operating area (2SD1760)

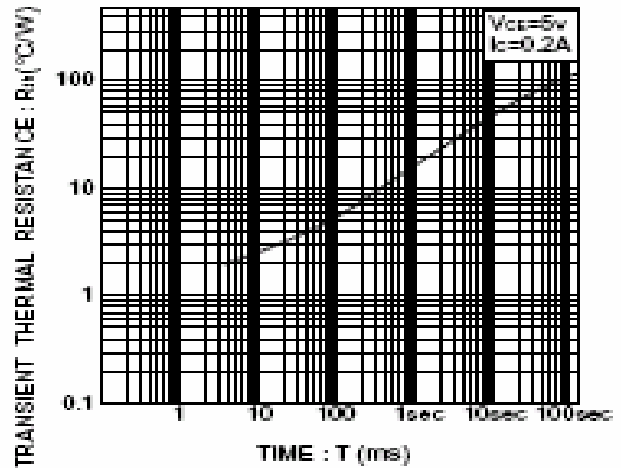


Fig.11 Transient thermal resistance (2SD1760)