银河微电 Galaxy Microelectronics

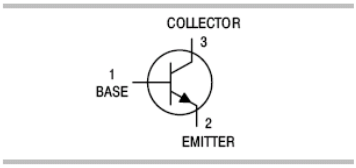
NPN Silicon Epitaxial Planar Transistor

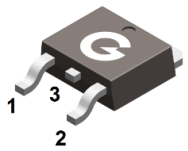
2SD1760

Features

- Low $V_{CE(sat)}$
- Complementary to 2SB1184
- RoHS compliant with Halogen-free

HF





TO-252

Mechanical Data

- Case: TO-252
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
2SD1760-P	TO-252	80 pcs / Tube or 2500 pcs / Tape & Reel	D1760
2SD1760-Q	TO-252	80 pcs / Tube or 2500 pcs / Tape & Reel	D1760
2SD1760-R	TO-252	80 pcs / Tube or 2500 pcs / Tape & Reel	D1760

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	60	V
Collector-Emitter Breakdown Voltage	V_{CEO}	50	V
Emitter-Base Breakdown Voltage	V_{EBO}	5	V
Collector Current (Continuous)	I_C	3	A
Collector Current (Pulse)	I_{CM}	4.5	A
Base Current (Continuous)	I_B	1	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T_A = 25°C) *1	P_D	2.5	W
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	50	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	15	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	17	°C/W
Junction Temperature	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 50μA, I_E = 0	60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 50μA, I_C = 0	5	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 40V, I_E = 0	-	-	1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 4V, I_C = 0	-	-	1	μA
DC Current Gain	h_{FE}	V_{CE} = 3V, I_C = 0.5A	82	-	390	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 2A, I_B = 0.2A	-	-	1	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 1.5A, I_B = 0.15A	-	-	1.2	V
Output Capacitance	C_{OBO}	V_{CB} = 10V, f = 1MHz	-	20	-	pF
Transition Frequency	f_T	I_C = 0.5A, V_{CE} = 5V f = 30MHz	-	90	-	MHZ

Classification of h_{FE}

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

Ratings and Characteristics Curves (@ T_A = 25°C unless otherwise specified)

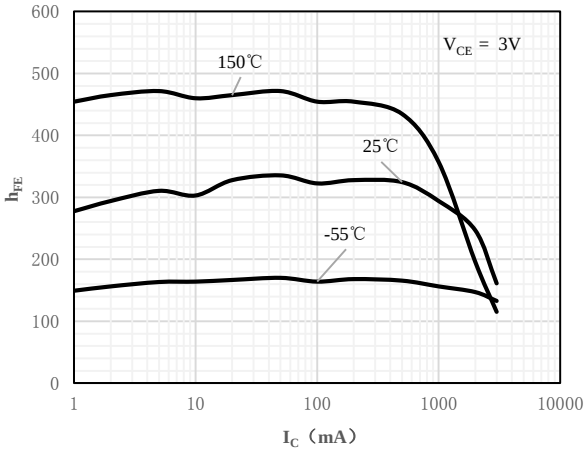


Fig 1 h_{FE} vs. I_C

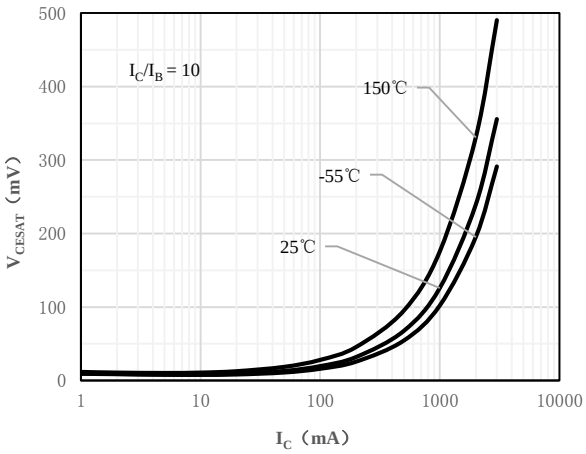


Fig 2 $V_{CE(sat)}$ vs. I_C

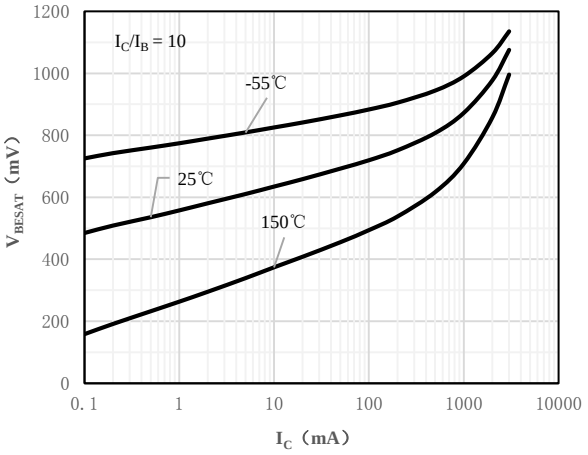


Fig 3 $V_{BE(sat)}$ vs. I_C

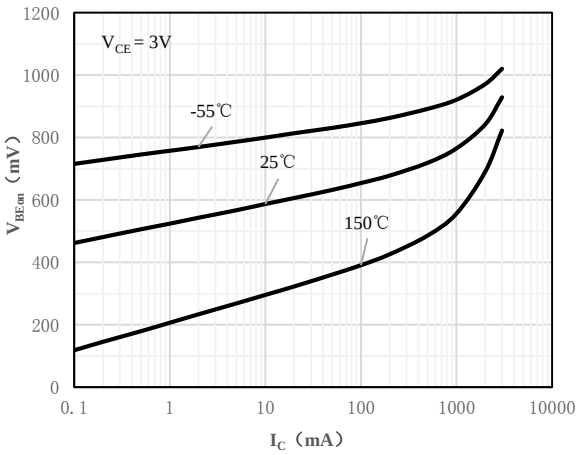


Fig 4 $V_{BE(ON)}$ vs. I_C

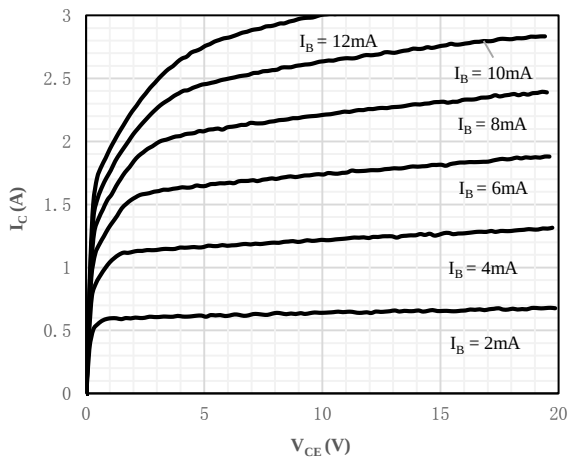


Fig 5 I_C vs. V_{CE}

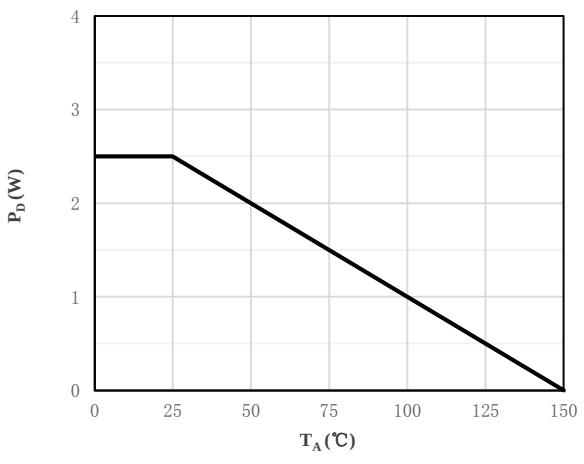


Fig 6 P_D vs. T_A

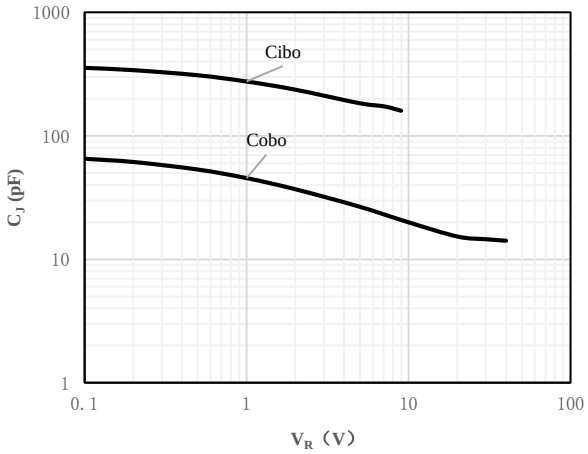


Fig 7 C_J vs. V_R

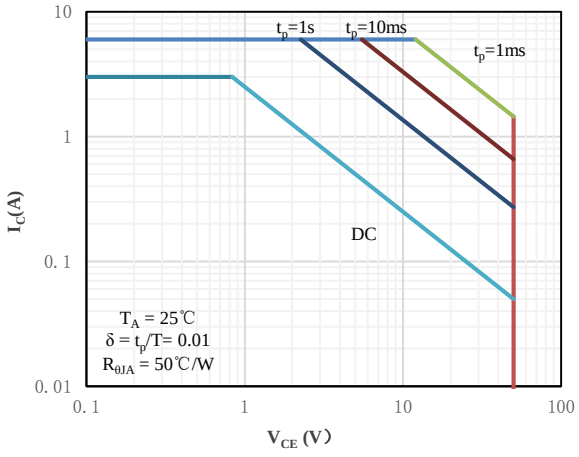
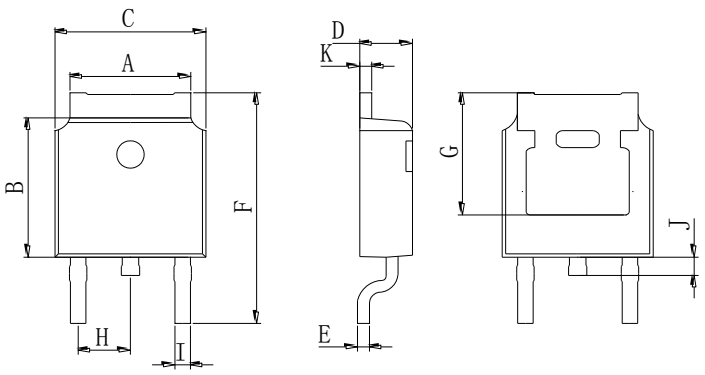


Fig 8 Safe Operating Area

Package Outline Dimensions (Unit: mm)



TO-252		
Dimension	**Min.**	**Max.**
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	9.71	10.31
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	0.50	0.70
K	0.40	0.60

Mounting Pad Layout (Unit: mm)

TO-252