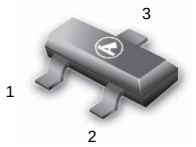
Medium Power Transistor (32V, 0.8A)

L2SD1781KQLT1G

L2SD1781KQLT1G Series
S-L2SD1781KQLT1G Series



SOT-23 /TO-236AB

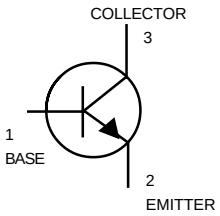
●Features

1) Very low $V_{CE(sat)}$.
   $V_{CE(sat)}$ < 0.4 V (Typ.)
   (I_C / I_B = 500mA / 50mA)
2) High current capacity in compact package.
3) Complements the L2SB1197KXLT1G
4) We declare that the material of product compliance with RoHS requirements.
5) S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

●Structure

Epitaxial planar type

NPN silicon transistor



●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	32	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	0.8	A(DC)
		1.5	A(Pulse) *
Collector power dissipation	P_C	200	mW
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55～+150	℃

* Single pulse Pw=100ms

ORDERING INFORMATION

Device	Marking	Shipping
L2SD1781KQLT1G S-L2SD1781KQLT1G	AFQ	3000 Tape & Reel
L2SD1781KQLT3G S-L2SD1781KQLT3G	AFQ	10000 Tape & Reel
L2SD1781KRLT1G S-L2SD1781KRLT1G	AFR	3000 Tape & Reel
L2SD1781KRLT3G S-L2SD1781KRLT3G	AFR	10000 Tape & Reel

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●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	40	—	—	V	I_C=50 μA
Collector-emitter breakdown voltage	BV_{CEO}	32	—	—	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	I_E=50 μA
Collector cutoff current	I_{CBO}	—	—	0.5	μA	V_{CB}=20V
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	V_{EB}=4V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.4	V	I_C/I_B=500mA/50mA
DC current transfer ratio	h_{FE}	120	—	390	—	V_{CE}=3V, I_C=100mA
Transition frequency	f_T	—	150	—	MHz	V_{CE}=5V, I_E=−50mA, f=100MHz
Output capacitance	Cob	—	10	—	pF	V_{CB}=10V, I_E=0A, f=1MHz

● DEVICE MARKING

L2SD1781KQLT1G=AFQ	L2S1781KRLT1G=AFR

Item	Q	R
h_{FE}	120~270	180~390

●Electrical characteristic curves

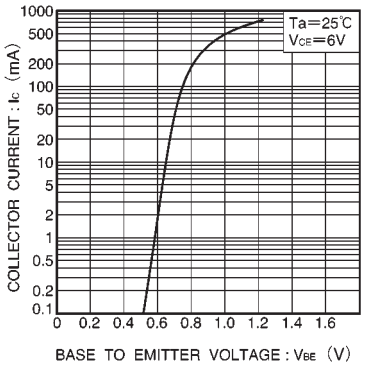

Fig.1 Grounded emitter propagation characteristics

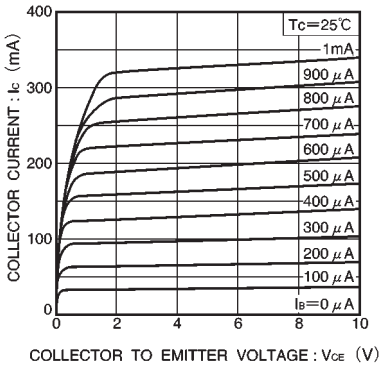

Fig.2 Grounded emitter output characteristics

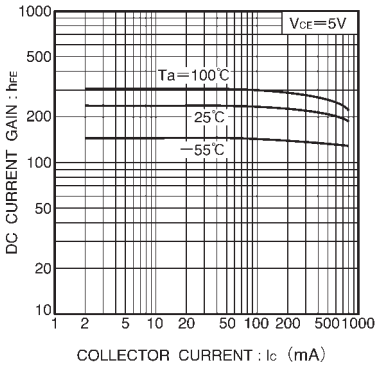

Fig.3 DC current gain vs. collector current

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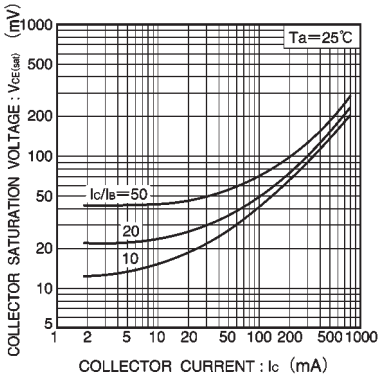

Fig.4 Collector-emitter saturation voltage vs. collector current (Ⅰ)

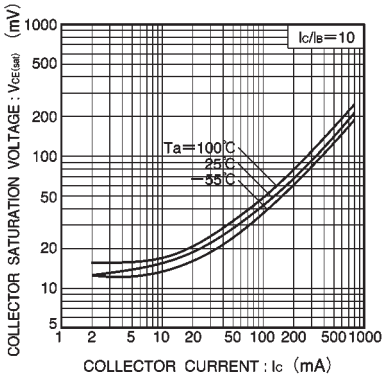

Fig.5 Collector-emitter saturation voltage vs. collector current (Ⅱ)

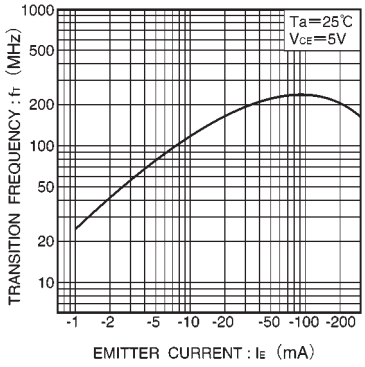

Fig.6 Gain bandwidth product vs. emitter current

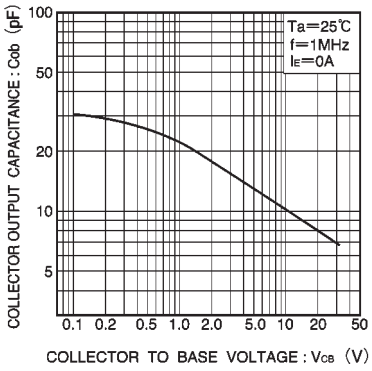

Fig.7 Collector output capacitance vs. collector-base voltage

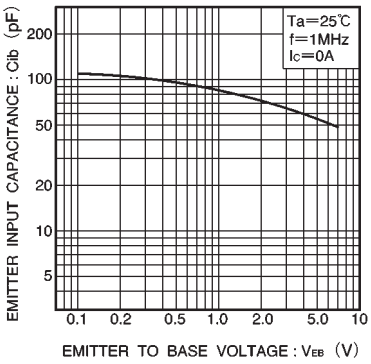

Fig.8 Emitter input capacitance vs. emitter-base voltage

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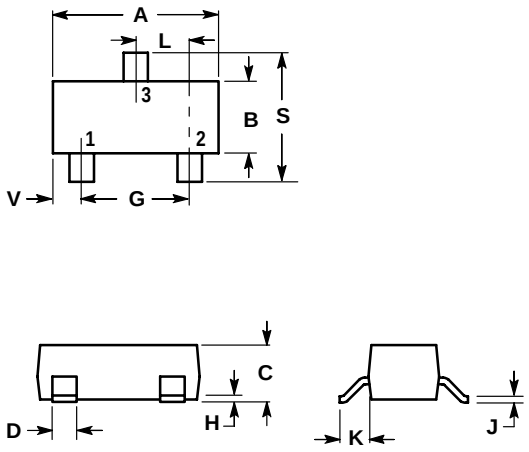

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

PIN 1. BASE
2. EMITTER
3. COLLECTOR