

Features

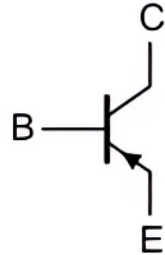
- -2A,-50V Middle Power Transistor
- Suitable for Middle Power Driver
- Low Collector-emitter saturation voltage

Applications

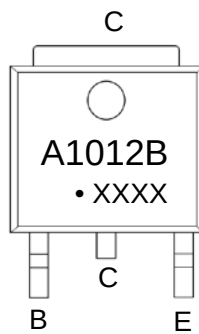
- Middle Power Driver
- LED Driver
- Power Supply



TO-252-2L top view



Schematic diagram



Marking and pin assignment



Halogen-Free

Maximum Ratings(Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current	-2	A
$P_C^{(1)}$	Collector Power Dissipation	1.25	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	100	°C/W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

(1). Mounted on a substrate

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
2SA1012B	TO-252-2L	A1012B	2,500	5,000	35,000	13"reel

Electrical Characteristics (T_J=25°C unless otherwise noted)

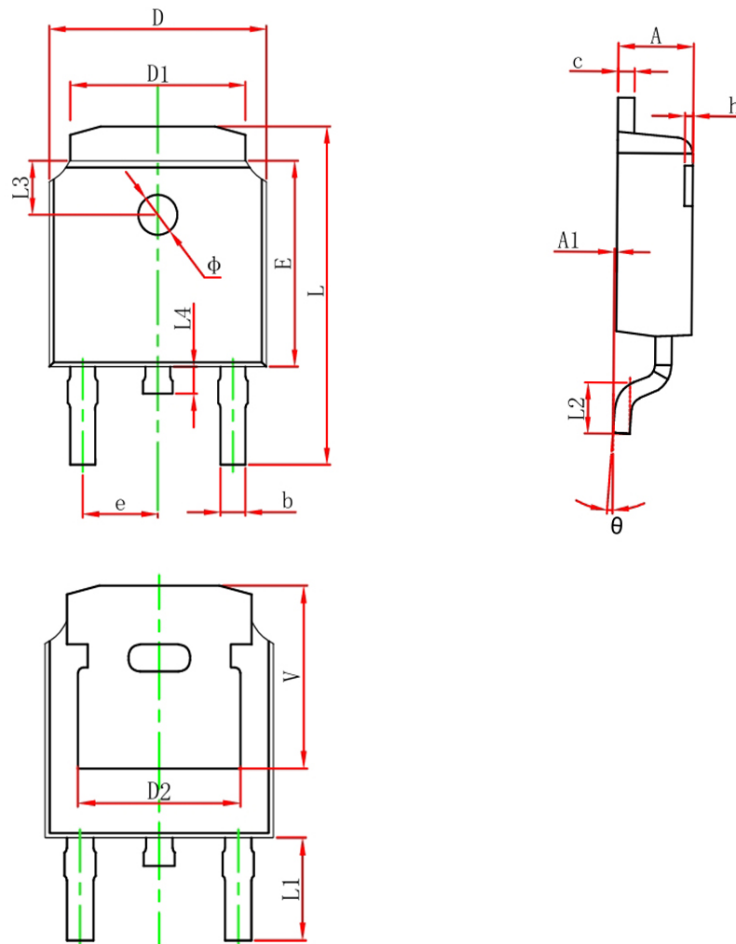
Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C = -50\mu A, I_E = 0$	-50	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C = -1mA, I_B = 0$	-50	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = -50\mu A, I_C = 0$	-6	--	--	V
I_{CBO}	Collector cut-off current	$V_{CB} = -50V, I_E = 0$	--	--	-0.1	μA
I_{EBO}	Emitter cut-off current	$V_{EB} = -5V, I_C = 0$	--	--	-0.1	μA
H_{FE}^*	DC current gain	$V_{CE} = -2V, I_C = -0.5A$	82	--	270	
$V_{CE(sat)}^*$	Collector-emitter saturation voltage	$I_C = -1A, I_B = -0.05A$	--	--	-0.35	V
C_{ob}	Collector output capacitance	$V_{CB} = -10V, I_E = 0, f = 1MHz$	--	36	--	pF
f_T^*	Transition frequency	$V_{CE} = -2V, I_C = -0.5A, f = 100MHz$	--	200	--	MHz

Notes:

 1. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Classification Of h_{FE}

Rank	P	Q
Range	82-180	120-270

TO-252-2L Package information


Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.450	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.386	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	