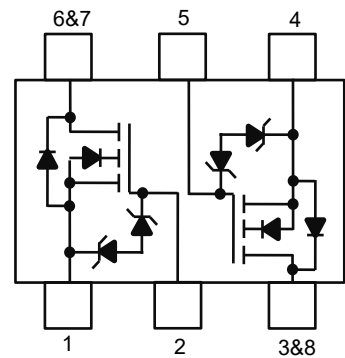


SI1012X6T3BG

S-SI1012X6T3BG

20 V, Dual N-channel Trench MOSFET



1. FEATURES

- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.
- Trench MOSFET technology

2. APPLICATION

- Relay driver
- High-speed line driver
- Low-side load switch
- Switching circuits

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
SI1012X6T3BG	A1	5000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	VDSS	20	V
Gate-Source Voltage	VGSS	±8	V
Drain Current (TA = 25 °C, VGS = 4.5 V)	ID	0.6	A
(TA = 100 °C, VGS = 4.5 V)		0.4	
Pulsed Drain Current (TA = 25 °C, single pulse, tp ≤ 10 μs)	IDM	2.5	A
Storage Temperature	Tstg	-55~+150	°C
Junction Temperature	TJ	150	°C

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Power Dissipation	PD	250	mW
Thermal Resistance, Junction-to-Ambient(Note 1)	RθJA	500	°C/W
Junction-to-Case	RθJC	300	

1. 30.0mm×25.0mm×1.6mm(FR4).

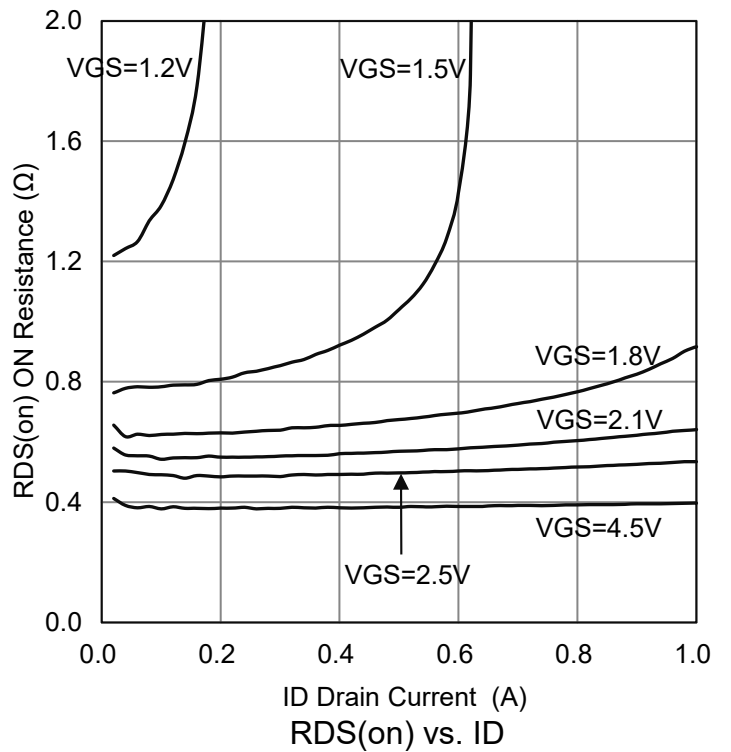
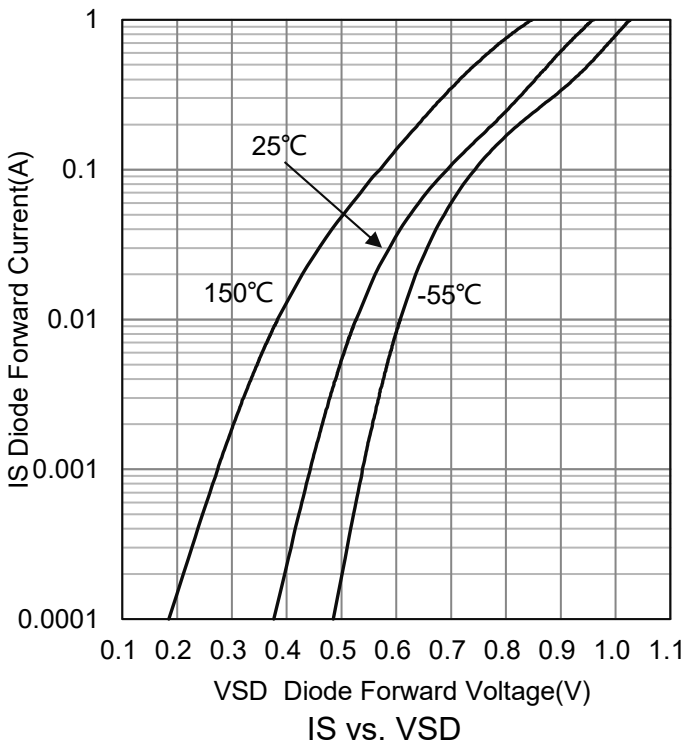
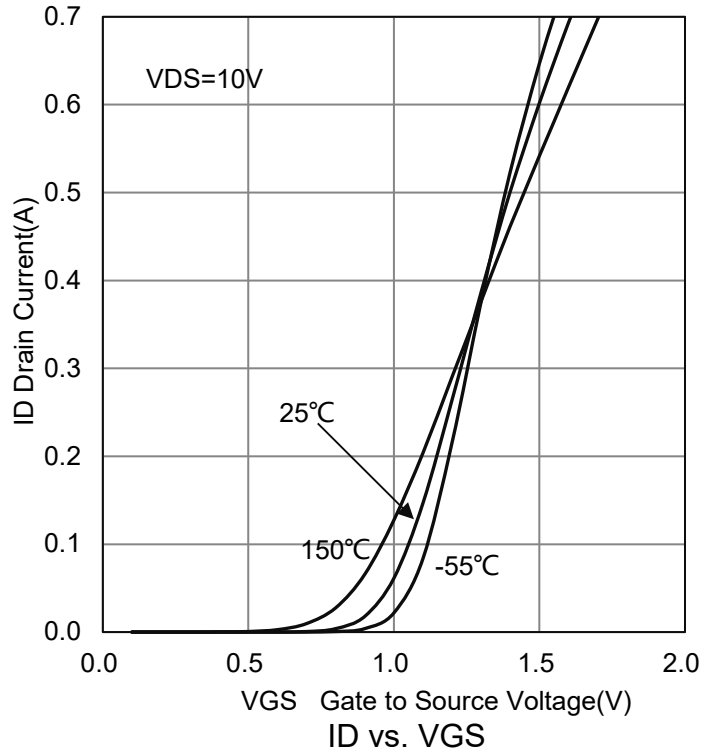
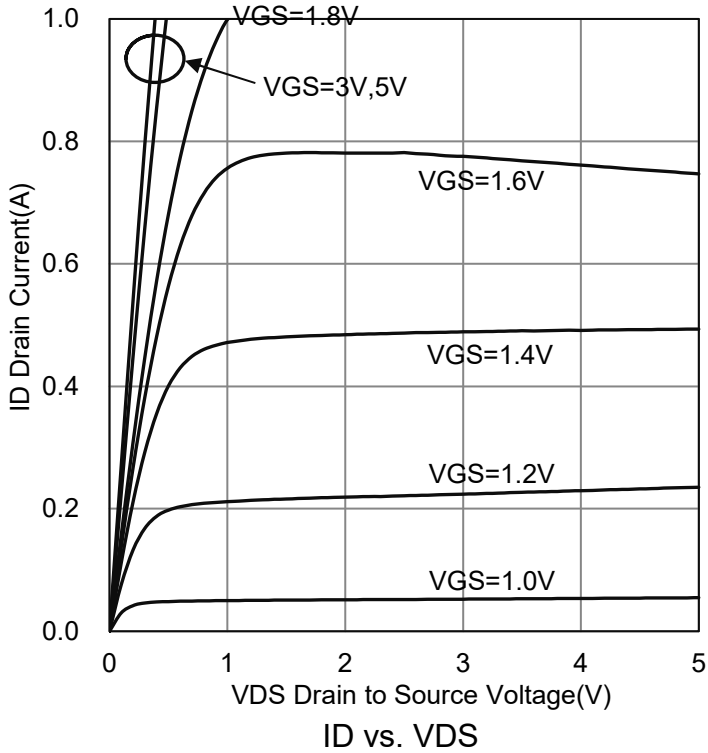


6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

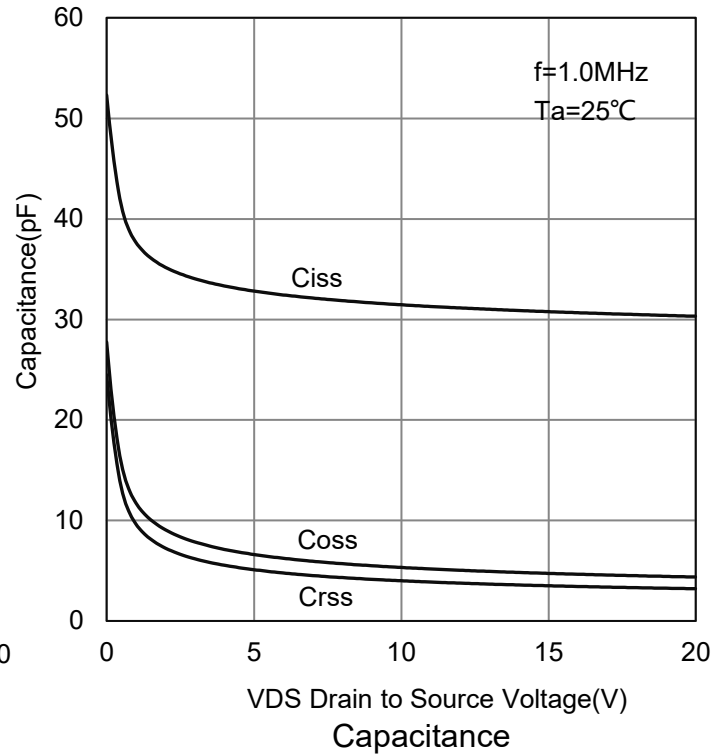
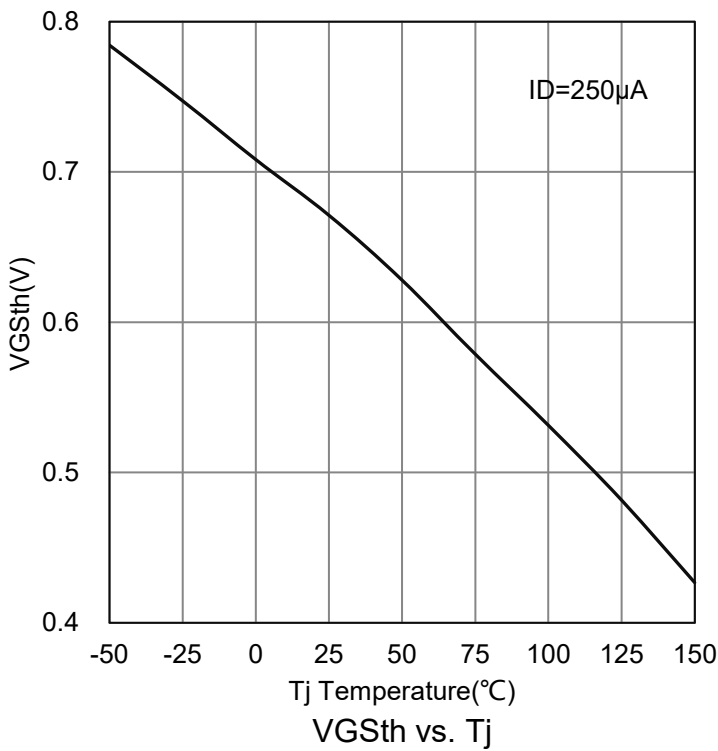
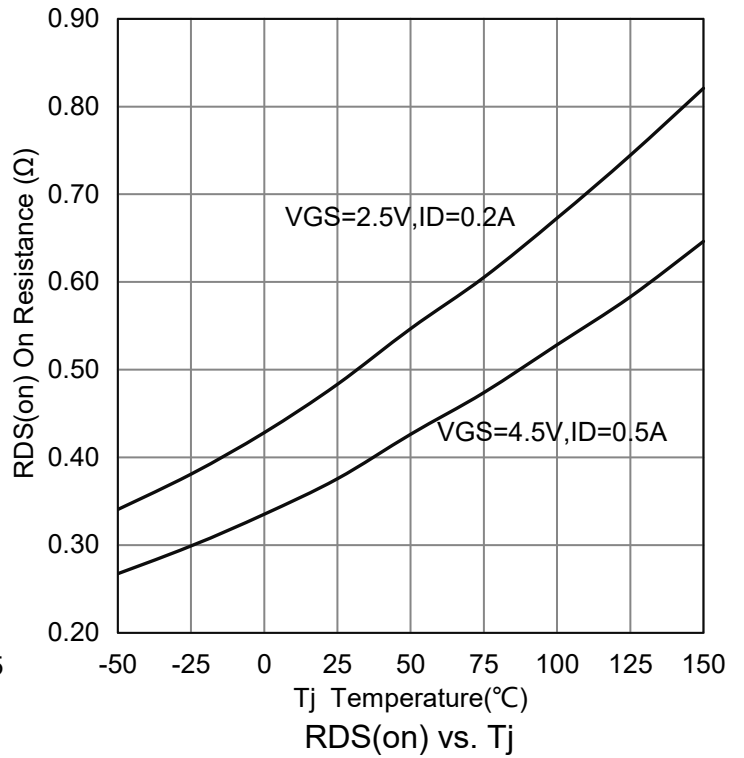
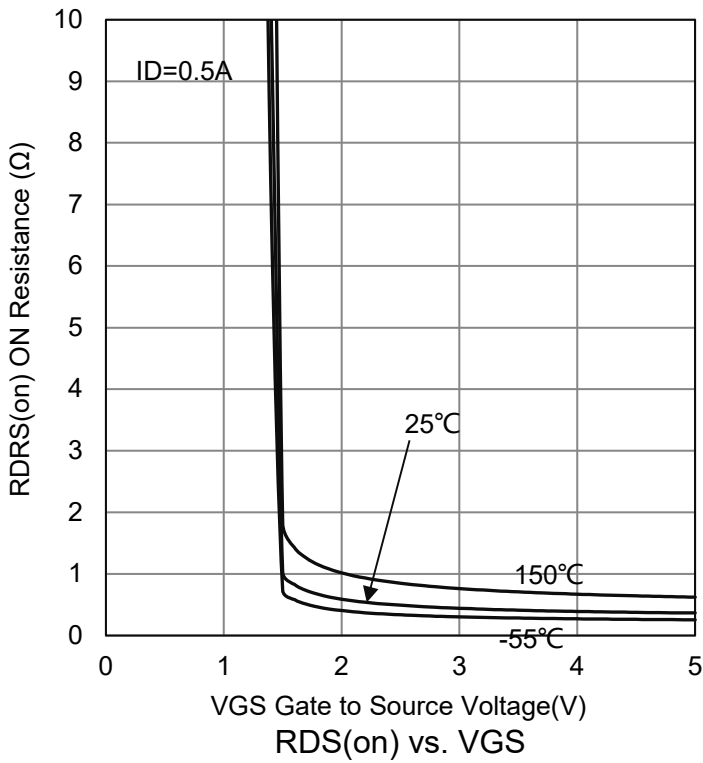
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Static						
Drain-Source Breakdown Voltage (VGS = 0 V, IDS = 250 μA)	BVDSS	20	-	-	V	
Gate Threshold Voltage (VDS = VGS, IDS = 250 μA)	VGS(th)	0.4	0.65	1	V	
Drain Leakage Current (VDS = 16 V, VGS = 0V)	IDSS	-	-	1	μA	
Gate Leakage Current (VGS = ±8 V, VDS = 0 V)	IGSS	-	-	±10	μA	
Drain-Source On-State Resistance (VGS = 4.5 V, IDS = 0.5 A) (VGS = 2.5 V, IDS = 0.2 A) (VGS = 1.8 V, IDS = 0.1 A) (VGS = 1.5 V, IDS = 0.05 A) (VGS = 1.2 V, IDS = 0.02 A)	RDS(ON)	-	0.45 0.55 0.75 1.2 2.5	0.6 0.8 1.2 -	Ω	
Diode Forward Voltage (IS = 0.5 A, VGS = 0 V)	VSD	-	0.8	1.3	V	
Dynamic						
Input Capacitance	(VGS = 0 V, VDS = 10 V, f=1MHz)	Ciss	-	31	-	pF
Output Capacitance		Coss	-	5.36	-	
Reverse Transfer Capacitance		Crss	-	4	-	
Total Gate Charge	(VGS = 4.5 V, VDS = 10 V, ID = 0.6 A)	Qg	-	0.51	-	nC
Gate-Source Charge		Qgs	-	0.05	-	
Gate-Drain Charge		Qgd	-	0.20	-	
Gate Resistance (VDS=0V, VGS=0V, f=1.0MHz)	Rg	-	83	-	Ω	



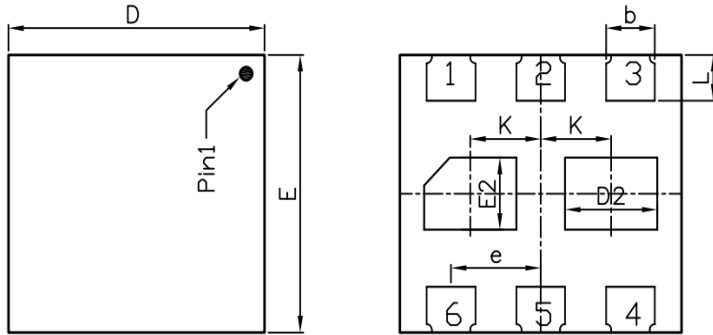
7. ELECTRICAL CHARACTERISTICS CURVES



7.ELECTRICAL CHARACTERISTICS CURVES(Con.)

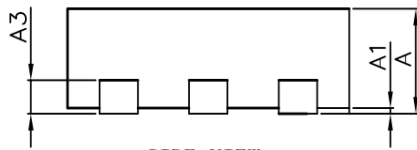


8. OUTLINE AND DIMENSIONS



TOP VIEW

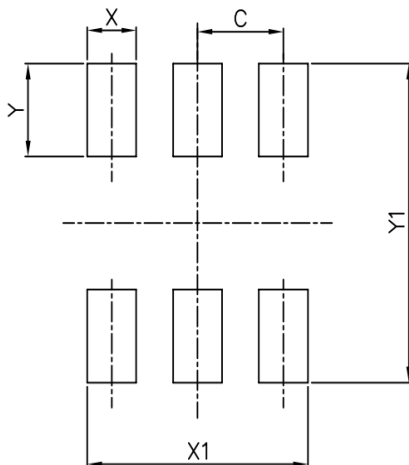
BOTTOM VIEW



SIDE VIEW

DFN1110-6A			
DIM	Min.	Typ.	Max.
A	0.34	0.37	0.40
A1	0.01	0.02	0.04
b	0.15	0.19	0.23
L	0.125	0.165	0.205
D	1.05	1.10	1.15
E	0.95	1.00	1.05
D2	0.32	0.36	0.40
E2	0.22	0.26	0.30
e	0.35		
A3	0.127 Ref.		
K	0.275		
All Dimensions in mm			

9. SOLDERING FOOTPRINT



DFN1110-6A	
Dim	(mm)
X	0.20
Y	0.35
C	0.35
X1	0.90
Y1	1.20

