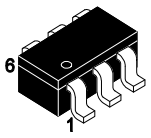
S-LNP2601T1G

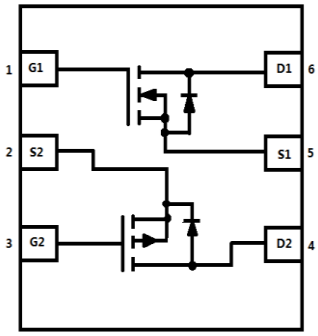
20 V Complementary Trench MOSFET



SOT26(TSOP-6)

1. FEATURES

- N-Channel:VDS = 20V
  RDS(ON)≤60mΩ,VGS@4.5V,IDS@1A
  RDS(ON)≤75mΩ,VGS@2.5V,IDS@1A
  RDS(ON)≤100mΩ,VGS@1.8V,IDS@1A
- P-Channel:VDS = -20V
  RDS(ON)≤80mΩ,VGS@-4.5V,IDS@-1.0A
  RDS(ON)≤95mΩ,VGS@-2.5V,IDS@-1.0A
  RDS(ON)≤120mΩ,VGS@-1.8V,IDS@-1.0A
- 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.



2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
S-LNP2601T1G	NP1	3000/Tape&Reel

3. Absolute Maximum Ratings (TA =25 ℃unless otherwise noted)

Parameter (N-Channel)	Symbol	Limits	Unit
Drain–Source Voltage	VDS	20	V
Gate–Source Voltage	VGS	± 12	V
Drain Current-Continuous	ID	3	A
Drain Current-Pulsed(Note 1)	IDM	11	A

Parameter (P-Channel)	Symbol	Limits	Unit
Drain–Source Voltage	VDS	-20	V
Gate–Source Voltage	VGS	± 8	V
Drain Current-Continuous	ID	-3.1	A
Drain Current-Pulsed(Note 1)	IDM	-9	A

4. THERMAL CHARACTERISTICS

Parameter		Symbol	Limits	Unit
Maximum Power Dissipation	TA = 25℃	PD	0.8	W
	TA = 70℃		0.6	
Thermal Resistance Junction–to–Ambient(Note 2)		RθJA	150	ºC/W
Thermal Resistance Junction–to–Case		RθJC	100	ºC/W
Operating Junction Temperature		Tj	150	ºC
Storage Temperature Range		Tstg	-50~+150	ºC

1.Repetitive Rating: Pulse width limited by the maximum junction temperature

2. 1-in ² 2oz Cu PCB board

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

N-Channel

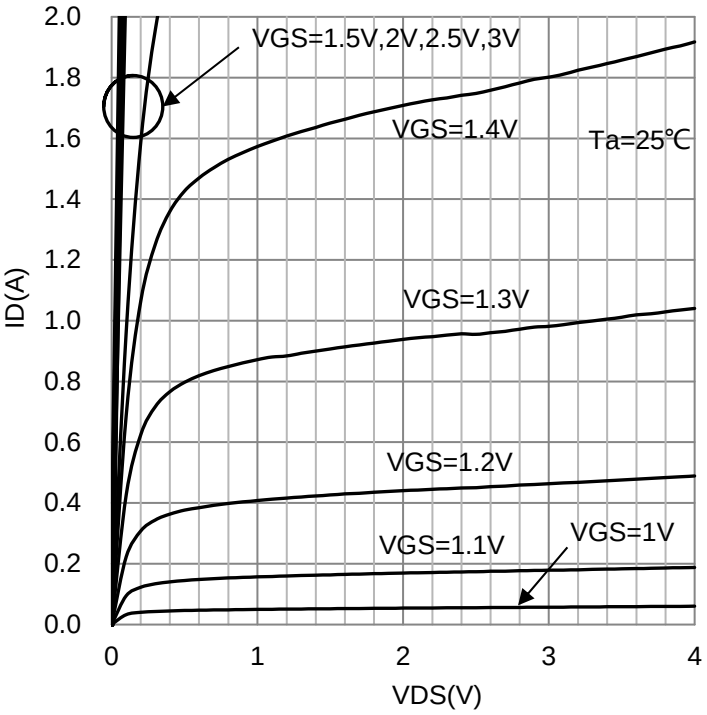
Parameter		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage (VGS = 0 V ID = 250 μA)		BVDSS	20	-	-	V
Drain-Source On-State Resistance (VGS= 4.5 V, ID = 1 A) (VGS= 2.5 V, ID = 1 A) (VGS= 1.8 V, ID = 1 A)		RDS(on)	- - -	- - -	60 75 100	mΩ
Gate Threshold Voltage (VDS = VGS, ID = 250 uA)		VGS(th)	0.4	-	1.2	V
Zero Gate Voltage Drain Current (VDS = 20 V, VGS = 0 V)		IDSS	-	-	1	uA
Gate Body Leakage (VGS = ± 12 V, VDS = 0 V)		IGSS	-	-	±1	uA
Diode Forward Voltage (IS = 1 A, VGS = 0 V)		VSD	-	-	1.5	V
Dynamic						
Input Capacitance	(VDS = 8 V, VGS = 0 V, f= 1MHz)	Ciss	-	565	-	pF
Output Capacitance		Coss	-	105	-	
Reverse Transfer Capacitance		Crss	-	75	-	
Total Gate Charge	(VDS = 10 V, ID = 6 A, VGS = 4.5 V)	Qg	-	5		nC
Gate-Source Charge		Qgs	-	1	-	
Gate-Drain Charge		Qgd	-	1.5	-	
Turn-On Delay Time	(VDD =10 V,RG = 6Ω ,ID = 1 A, VGS = 4.5 V)	td(on)	-	8		nS
Turn-On Rise Time		t_r	-	10		
Turn-Off Delay Time		td(off)	-	22		
Turn-Off Fall Time		tf	-	6		

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

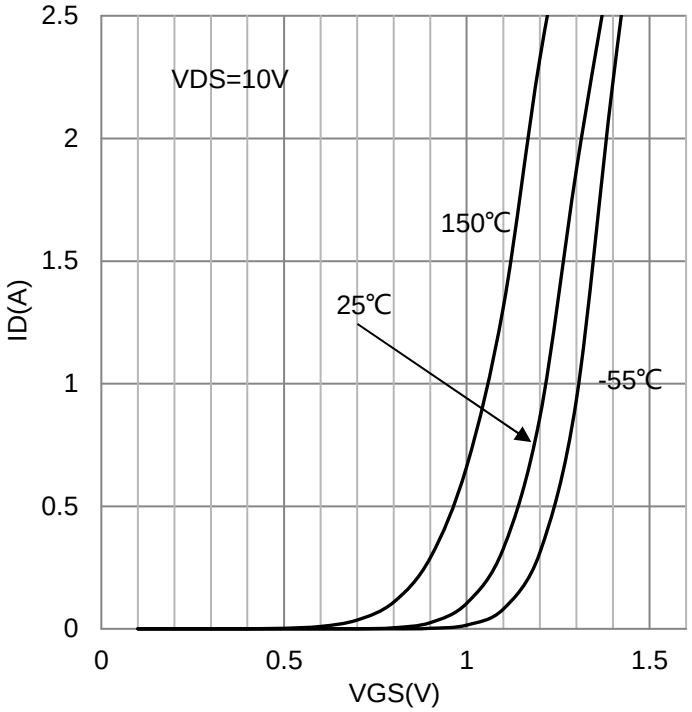
P-Channel

Parameter		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage (VGS = 0 V ID = -250 μA)		BVDSS	-20	-	-	V
Drain-Source On-State Resistance (VGS= -4.5 V, ID = -1 A) (VGS= -2.5 V, ID = -1 A) (VGS= -1.8 V, ID = -1 A)		RDS(on)	- - -	- - -	80 95 120	mΩ
Gate Threshold Voltage (VDS = VGS, ID = -250 uA)		VGS(th)	-0.4	-	-1	V
Zero Gate Voltage Drain Current (VDS = -20 V, VGS = 0 V)		IDSS	-	-	-1	uA
Gate Body Leakage (VGS = ± 8 V, VDS = 0 V)		IGSS	-	-	±1	uA
Diode Forward Voltage (IS = -1 A, VGS = 0 V)		VSD	-	-	-1.5	V
Dynamic						
Input Capacitance	(VDS = -4 V, VGS = 0 V, f= 1MHz)	Ciss	-	1245	-	pF
Output Capacitance		Coss	-	375	-	
Reverse Transfer Capacitance		Crss	-	210	-	
Total Gate Charge	(VDS = -6 V, ID = -2.8 A, VGS = -4.5 V)	Qg	-	9.1	-	nC
Gate-Source Charge		Qgs	-	2	-	
Gate-Drain Charge		Qgd	-	1.7	-	
Turn-On Delay Time	(VDD = -4 V,RL = 4Ω ,ID = -1 A, VGS = -4.5 V, RG = 6 Ω)	td(on)	-	13	-	nS
Turn-On Rise Time		t_r	-	25	-	
Turn-Off Delay Time		td(off)	-	55	-	
Turn-Off Fall Time		tf	-	19	-	

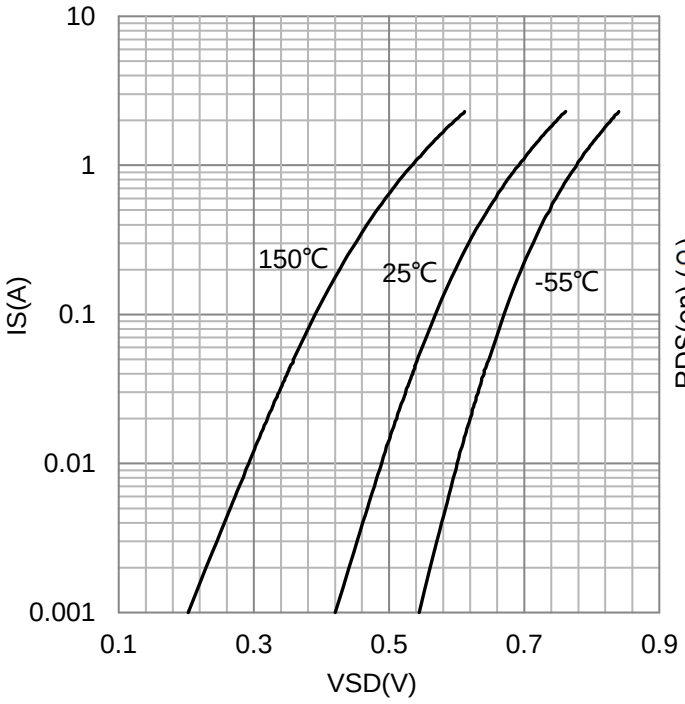
6.ELECTRICAL CHARACTERISTICS CURVES(N-Channel)



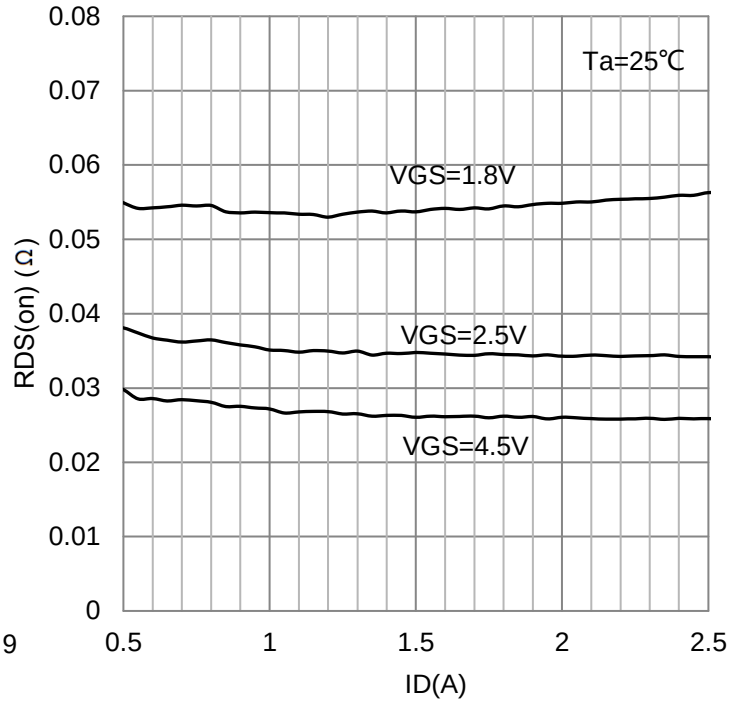
ID vs. VDS



ID vs. VGS

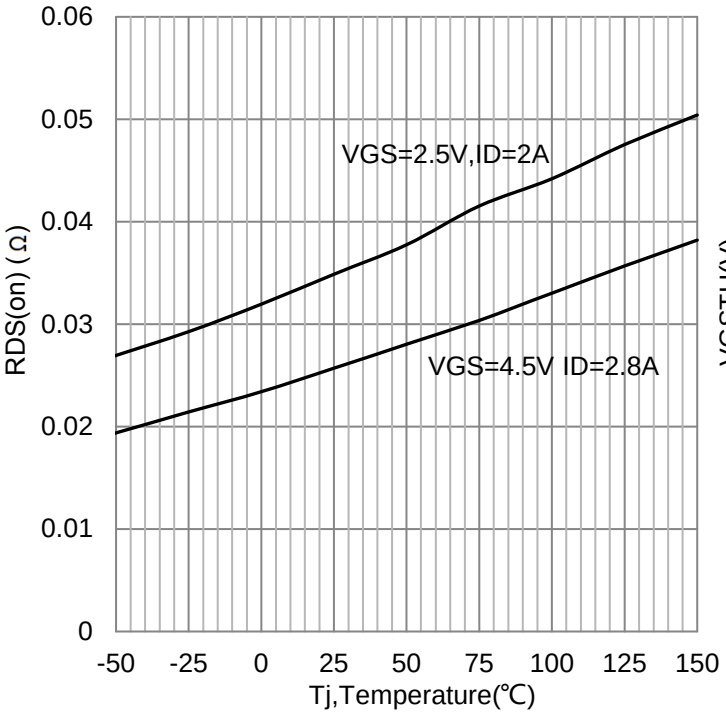


IS vs. VSD

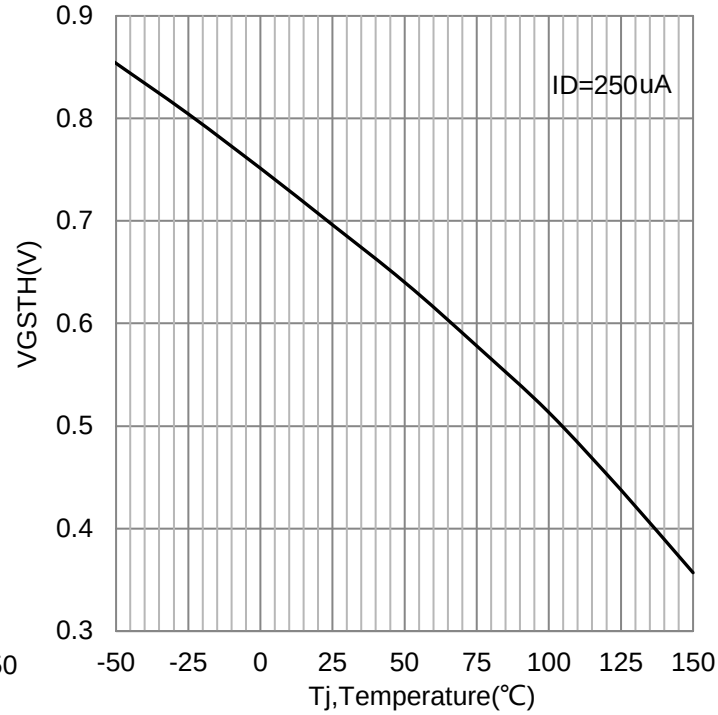


RDS(on) vs. ID

6.ELECTRICAL CHARACTERISTICS CURVES(N-Channel)(Con.)

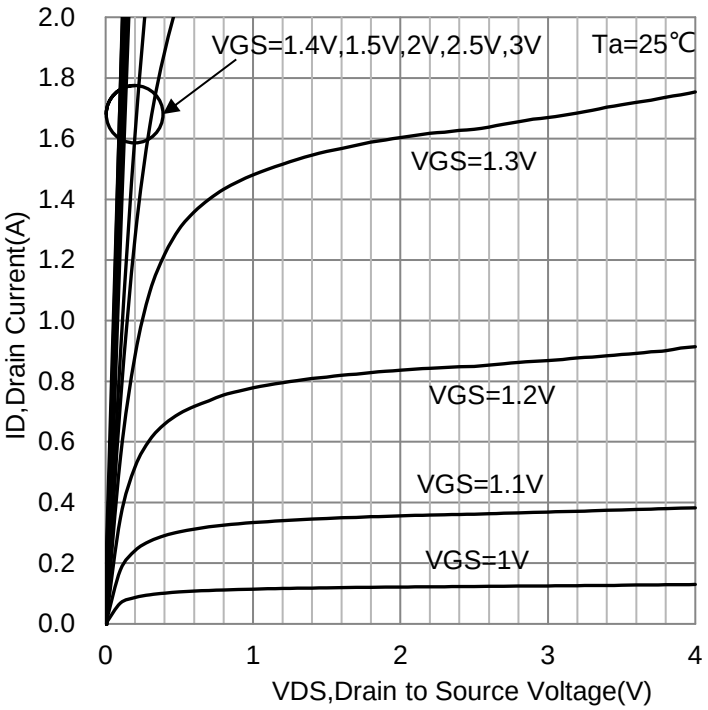


RDS(on) vs. Tj

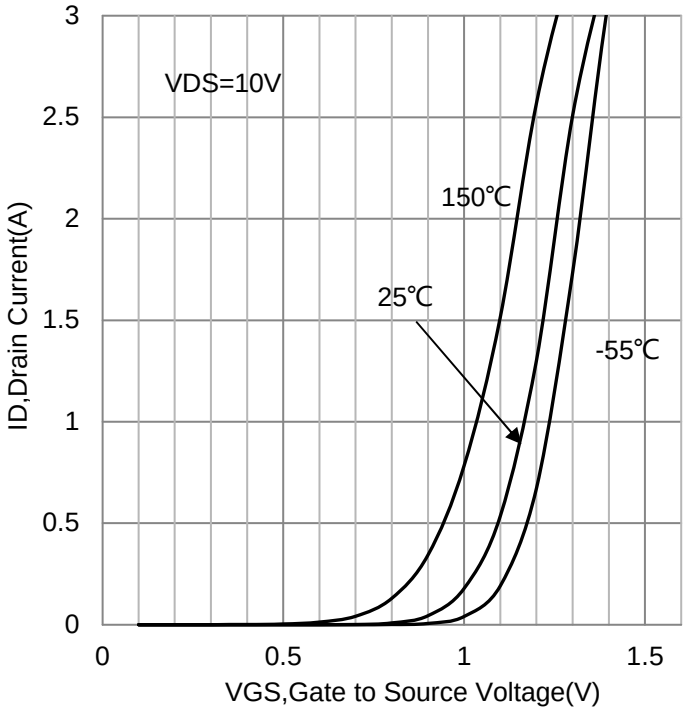


VGSTH vs. Tj

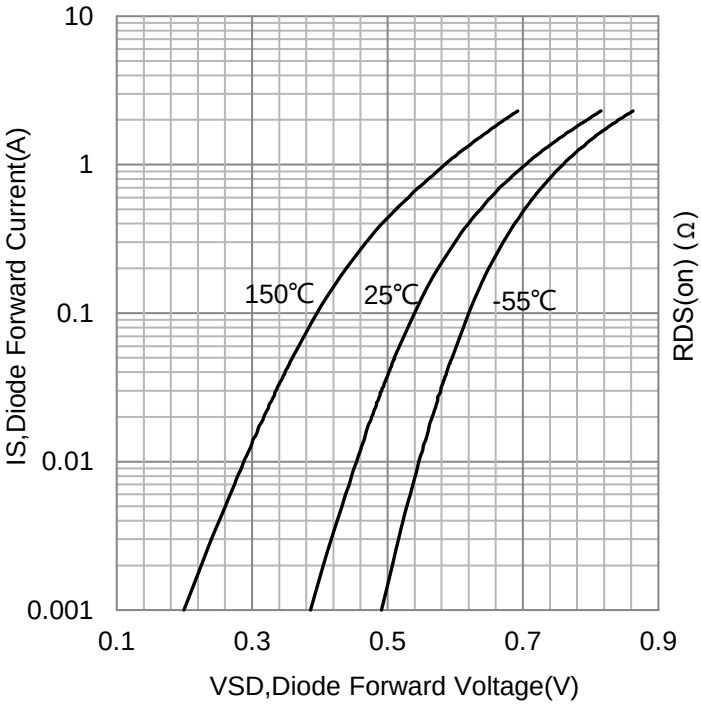
6.ELECTRICAL CHARACTERISTICS CURVES(P-Channel)



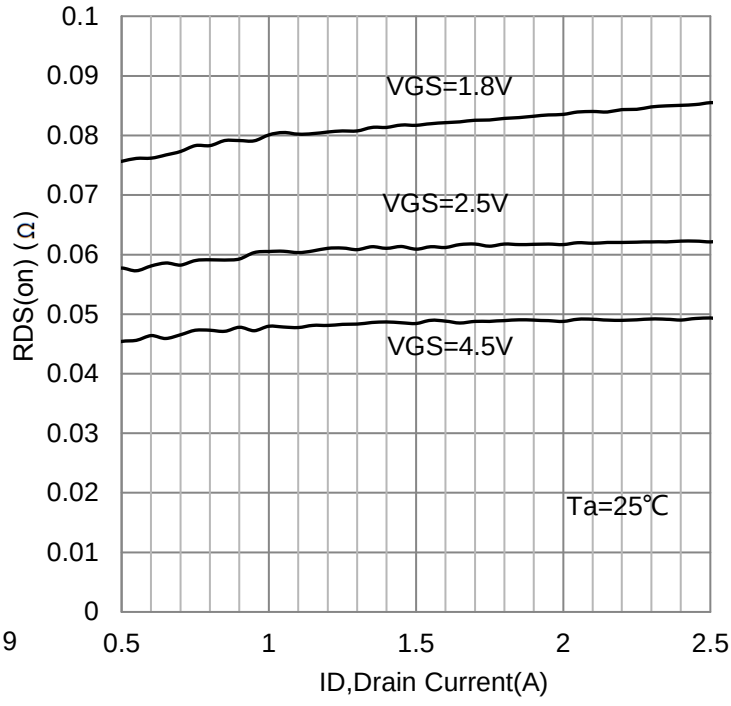
ID vs. VDS



ID vs. VGS

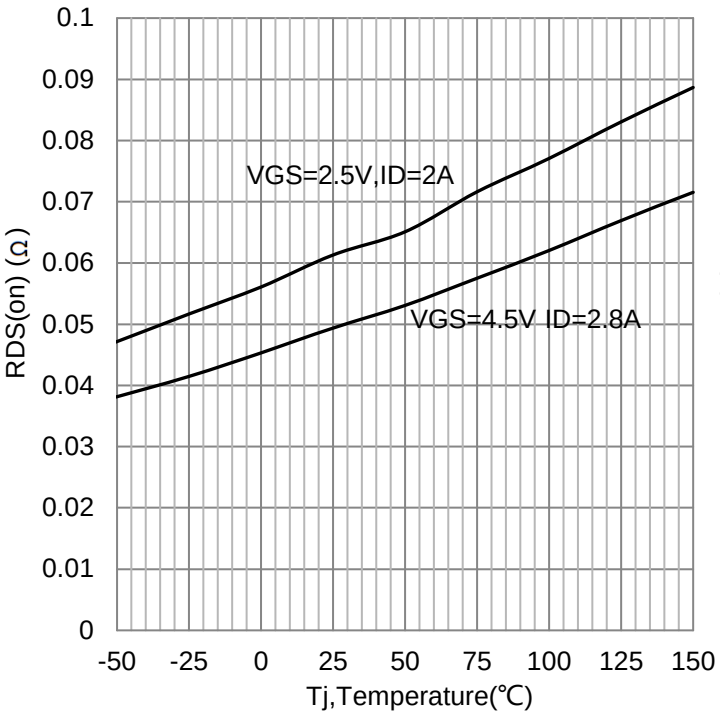


IS vs. VSD

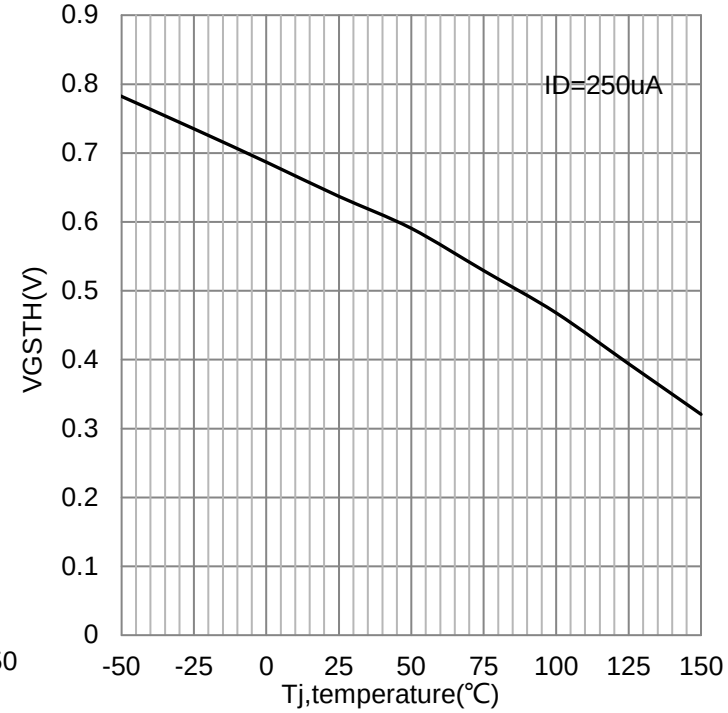


RDS(on) vs. ID

6.ELECTRICAL CHARACTERISTICS CURVES(P-Channel)(Con.)

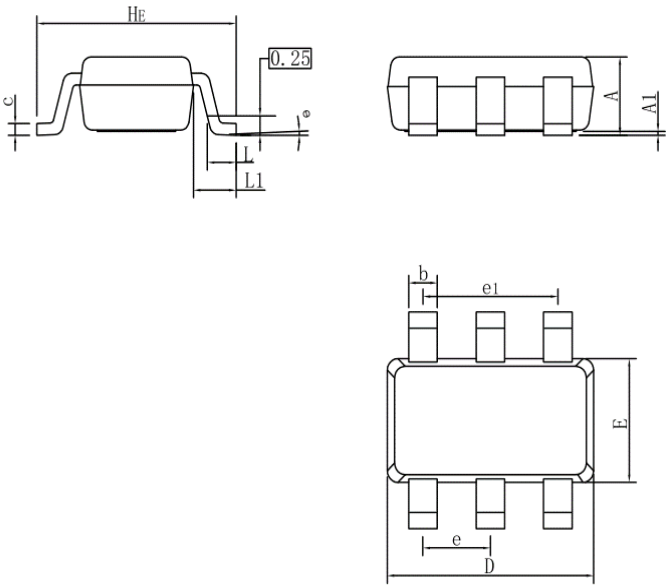


RDS(on) vs. Tj



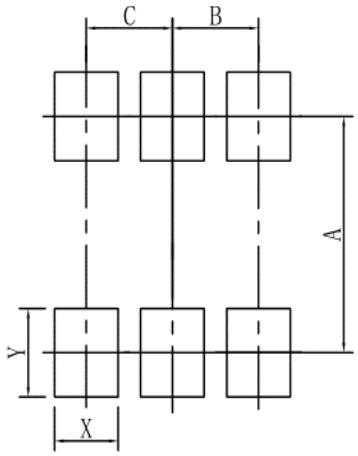
VGSTH vs. Tj

7.OUTLINE AND DIMENSIONS



SOT26			
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.01	0.06	0.10
b	0.30	0.40	0.50
c	0.10	0.17	0.20
D	2.80	2.90	3.00
E	1.50	1.60	1.70
e	0.85	0.95	1.05
e1	1.80	1.90	2.00
L	0.20	0.40	0.60
L1	0.60REF		
HE	2.60	2.80	3.00
θ	0 °	-	10°

8.SOLDERING FOOTPRINT



SOT26	
DIM	(mm)
X	0.70
Y	0.90
A	2.40
B	0.95
C	0.95

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.

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