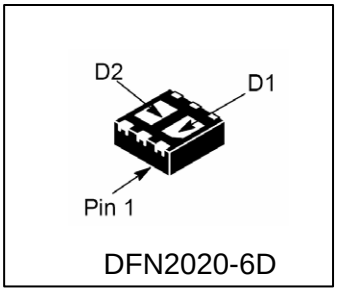
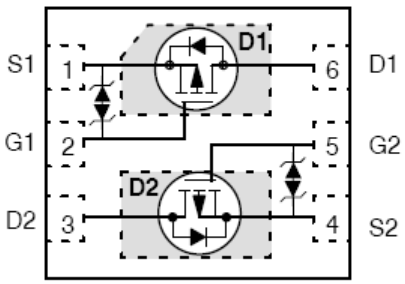
S-LDP3415EDT2AG

20V P-Channel Enhancement-Mode MOSFET



1. FEATURES

- VDS = -20V
- RDS(ON),VGS@-4.5V,IDS@-4A=60mΩ
- RDS(ON),VGS@-2.5V,IDS@-4A=75mΩ
- RDS(ON),VGS@-1.8V,IDS@-2A=85mΩ
- 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;



2. APPLICATIONS

- Advanced trench process technology
- High density cell design for ultra low on-resistance.

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
S-LDP3415EDT2AG	20V	4000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	-20	V
Gate–to–Source Voltage – Continuous	VGS	±8	V
Drain Current – Continuous TA = 25°C – Pulsed (Note 1)	 ID IDM	 -4 -30	A

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Power Dissipation	PD	1.1	W
Thermal Resistance, Junction–to–Ambient(Note 2)	RΘJA	110	ºC/W
Junction and Storage temperature	TJ,Tstg	−55~+150	° C

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

2.1-in² 2oz Cu PCB board.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

STATIC CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = -250μA)	VBRDSS	-20	-	-	V
Zero Gate Voltage Drain Current (VGS = 0, VDS = -16 V)	IDSS	-	-	-1	μA
Gate–Body Leakage Current, Forward (VGS = 8 V)	IGSSF	-	-	10	μA
Gate–Body Leakage Current, Reverse (VGS = - 8 V)	IGSSR	-	-	-10	μA
Gate Threshold Voltage (VDS = VGS, ID = -250μA)	VGS(th)	-0.3	-	-1.0	V
Static Drain–Source On–State Resistance	RDS(on)				mΩ
(VGS = -4.5V, ID = -4A)		-	-	60	
(VGS = -2.5V, ID = -4A)		-	-	75	
(VGS = -1.8V, ID = -2.0A)		-	-	85	

DYNAMIC CHARACTERISTICS(Note 3)

Total Gate Charge (VDS=-10V, ID = -4A,VGS = -4.5V)	Qg	-	11.4	14.82	nC
Gate-Source Charge (VDS=-10V, ID = -4A,VGS = -4.5V)	Qgs	-	2.14	2.78	nC
Gate-Drain Charge (VDS=-10V, ID = -4A,VGS = -4.5V)	Qgd	-	2.51	3.26	nC
Input Capacitance (VDS =-10V, f=1.0MHz,VGS = 0V)	Ciss	-	1140	-	pF
Output Capacitance (VDS =-10V, f=1.0MHz,VGS = 0V)	Coss	-	98	-	pF
Reverse Transfer Capacitance (VDS =-10V, f=1.0MHz,VGS = 0V)	Crss	-	95	-	pF

SWITCHING CHARACTERISTICS

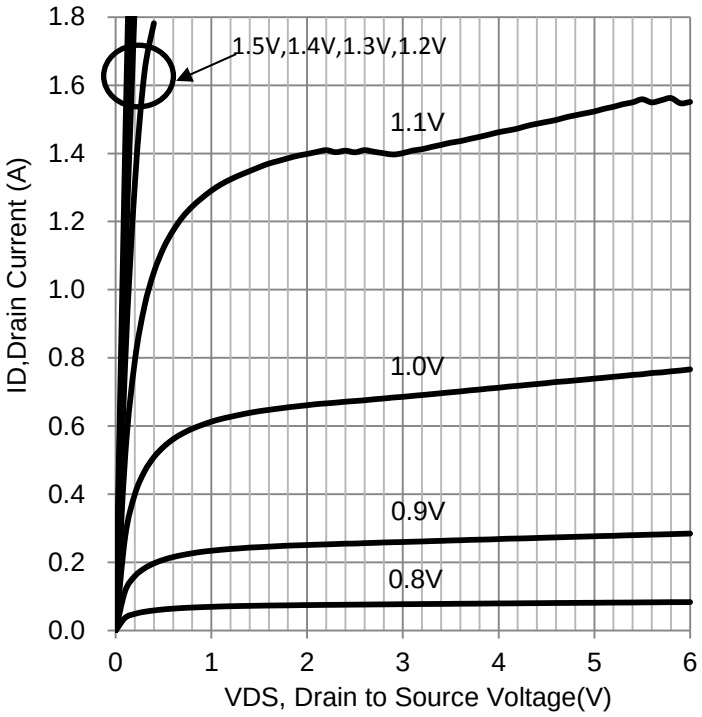
Turn-On Delay Time	(VDD = -10V, RL=2.5Ω ID = -1A, VGEN = -4.5V, RG = 3Ω)	td(on)	-	965.2	1930.4	ns
Rise Time		tr	-	1604	3208	
Turn-Off Delay Time		td(off)	-	7716	15432	
Fall Time		tf	-	3452	6904	

SOURCE–DRAIN DIODE CHARACTERISTICS

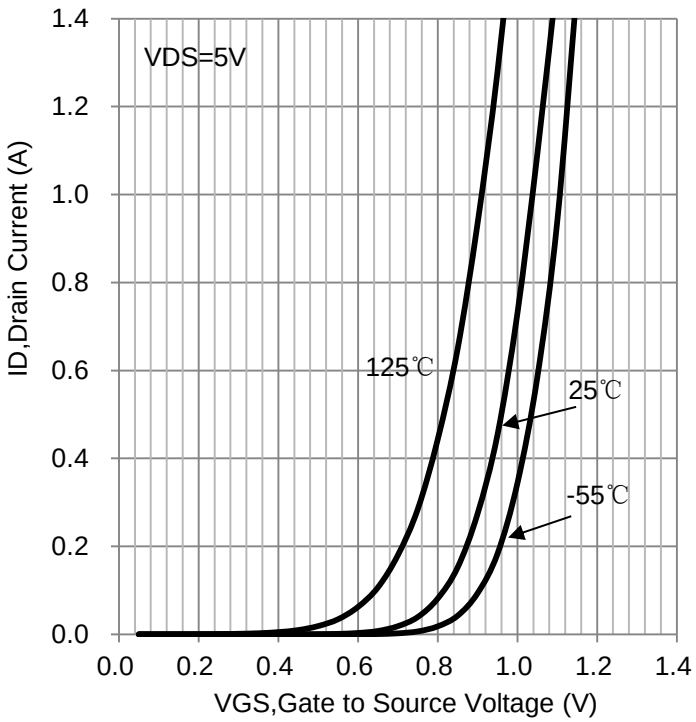
Forward Voltage (VGS = 0 V, ISD = -1.0 A)	VSD	-	-	-1	V
Max.Forward Current	IS	-	-	-2.2	A

3.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

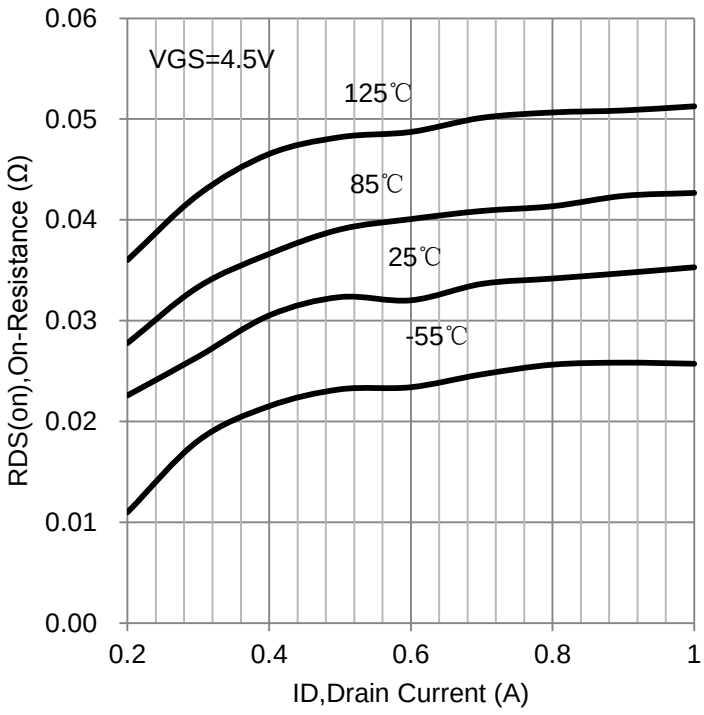
7. ELRCTRICAL CHARACTERISTICS CURVES



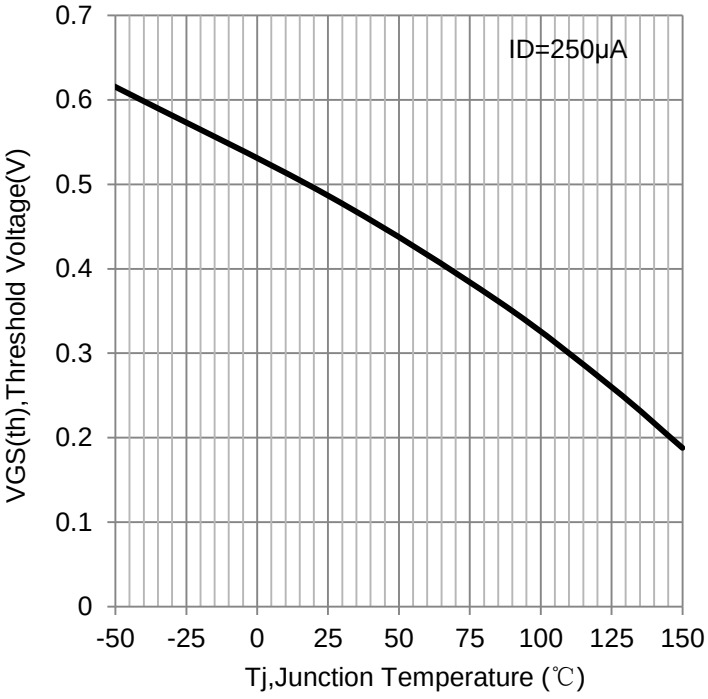
On-Region Characteristics



Transfer Characteristics

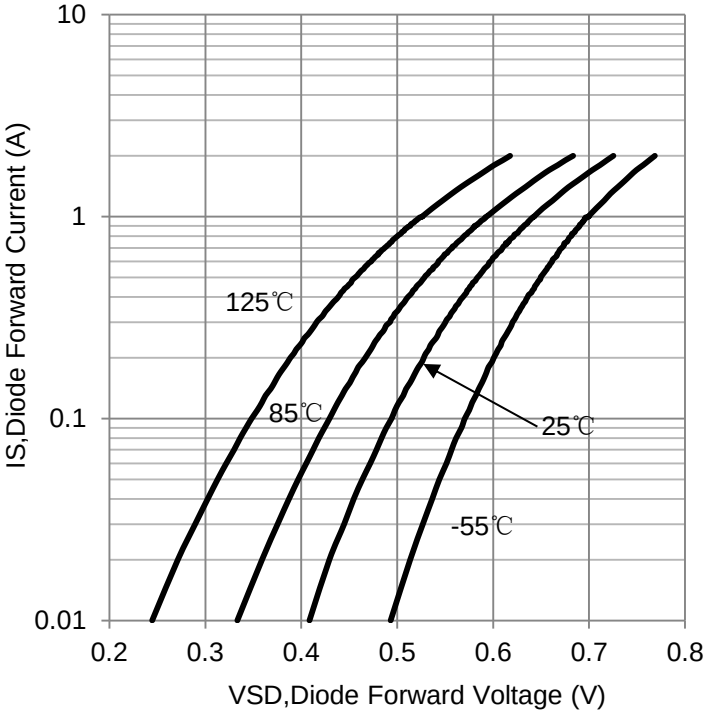


On-Resistance vs. Drain Current and Temperature



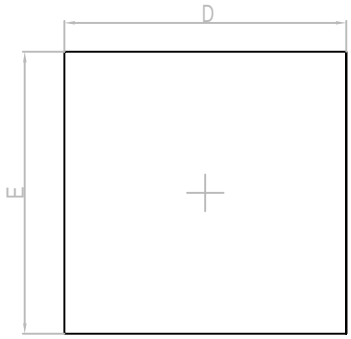
VGS(th) vs. Tj

7.ELRCTRICAL CHARACTERISTICS CURVES（Con.）

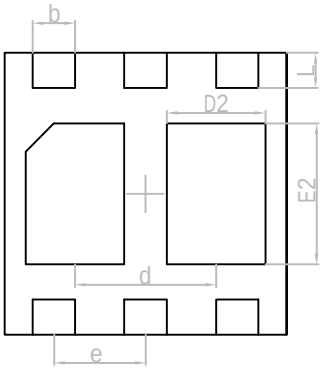


Diode Forward Voltage vs.

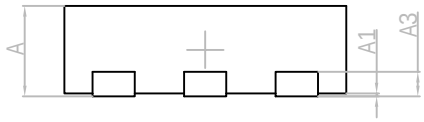
8.OUTLINE AND DIMENSIONS



TOP VIEW

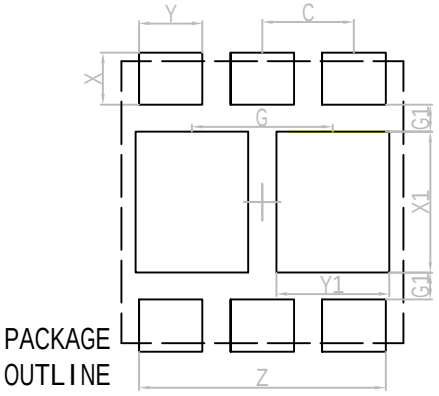


BOTTOM VIEW



DFN2020-6D			
Dim	Min	Typ	Max
D	1.95	2.00	2.05
E	1.95	2.00	2.05
e	-	0.65	-
L	0.20	0.25	0.30
b	0.25	0.30	0.35
d	-	1.00	-
A	0.60	0.65	0.70
A1	0	0.02	0.05
A3	-	0.152	-
E2	0.95	1.00	1.05
D2	0.65	0.70	0.75
All Dimensions in mm			

9.SOLDERING FOOTPRINT



PACKAGE
OUTLINE

Dimensions	(mm)
X	0.37
Y	0.45
X1	1.00
Y1	0.80
C	0.65
G	1.00
G1	0.19
Z	1.75
C	0.65