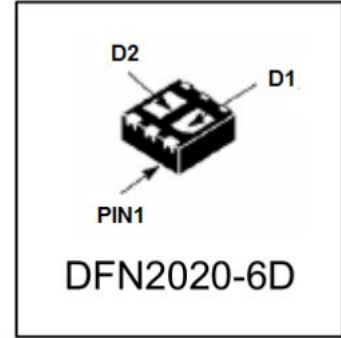


# DN3432D

## N-Channel 30-V (D-S) MOSFET



### 1. FEATURES

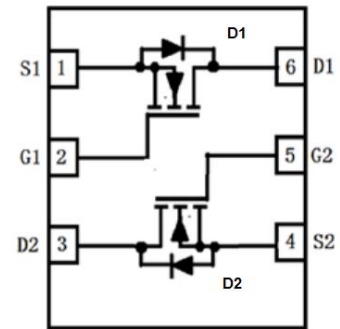
- Low RDS(on) trench technology.
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.

### 2. APPLICATION

- Power Routing
- DC/DC Conversion
- Motor Drives

### 3. ORDERING INFORMATION

Device	Marking	Shipping
DN3432D	30V	4000/Tape&Reel



### 4. MAXIMUM RATINGS(Ta = 25°C unless otherwise stated)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDSS	30	V
Gate-to-Source Voltage		VGS	±20	V
Continuous Drain Current	TC =25°C	ID	9	A
	TC =70°C		7	
	TA =25°C (Note 1)		6.2	
	TA =70°C (Note 1)		4.5	
Pulsed Drain Current (Note 2)		IDM	26	
Continuous Source Current (Diode Conduction)(Note 1)		IS	2.7	A
Power Dissipation	TC =25°C	PD	6.9	W
	TC =70°C		4.2	
	TA =25°C (Note 1)		2.2	
	TA =70°C (Note 1)		1.4	
Operating Junction Temperature		TJ	-55 ~+175	°C
Storage Temperature Range		Tstg	-55 ~+175	

1.Surface Mounted on 1" x 1" FR4 Board.

2.Pulse width limited by maximum junction temperature.

### 5. THERMAL CHARACTERISTICS

Parameter		Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	t ≤10s	RθJA	48	°C/W
	Steady State		95	
Maximum Junction-to-Case	Steady State	RθJC	14.5	



**6. ELECTRICAL CHARACTERISTICS**

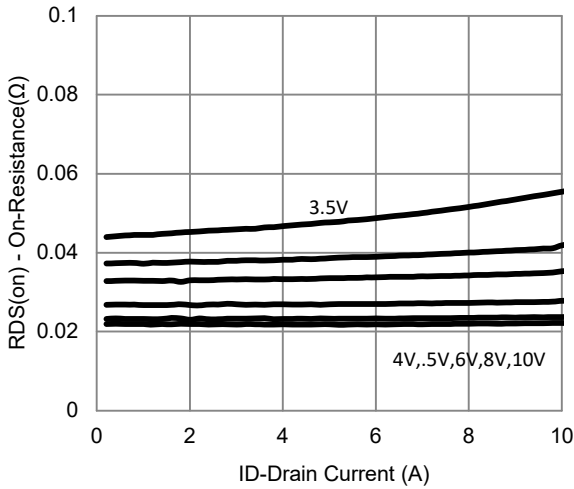
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Static						
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 $\mu$ A)	VGS(th)	1	1.5	3	V	
Gate-Body Leakage (VDS = 0 V, VGS = $\pm$ 20 V)	IGSS	-	-	$\pm$ 100	nA	
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V) (VDS = 24 V, VGS = 0 V, TJ = 85°C)	IDSS	-	-	1 30	$\mu$ A	
On-State Drain Current(Note 3) (VDS = 5 V, VGS = 10 V)	ID(on)	20	-	-	A	
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 6 A) (VGS = 4.5 V, ID = 5 A)	RDS(on)	-	-	22 34	m $\Omega$	
Forward Transconductance(Note 3) (VDS = 15 V, ID = 8.2 A)	gfs	-	12	-	S	
Diode Forward Voltage(Note 3) (IS = 0.5A, VGS = 0 V)	VSD	-	-	1.3	V	
Dynamic(Note 4)						
Total Gate Charge	(VDS = 15 V, VGS = 4.5 V, ID = 8.2 A)	Qg	-	6.4	-	nC
Gate-Source Charge		Qgs	-	1.3	-	
Gate-Drain Charge		Qgd	-	2.2	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 Mhz)	Ciss	-	660	-	pF
Output Capacitance		Coss	-	75	-	
Reverse Transfer Capacitance		Crss	-	66	-	
Turn-On Delay Time	(VDS = 15 V, RL = 1.9 $\Omega$ , ID = 8.2 A, VGEN = 10 V, RGEN = 6 $\Omega$ )	td(on)	-	24	-	ns
Rise Time		tr	-	34	-	
Turn-Off Delay Time		td(off)	-	46	-	
Fall Time		tf	-	44	-	

3. Pulse test: PW  $\leq$  300 $\mu$ s duty cycle  $\leq$  2%.

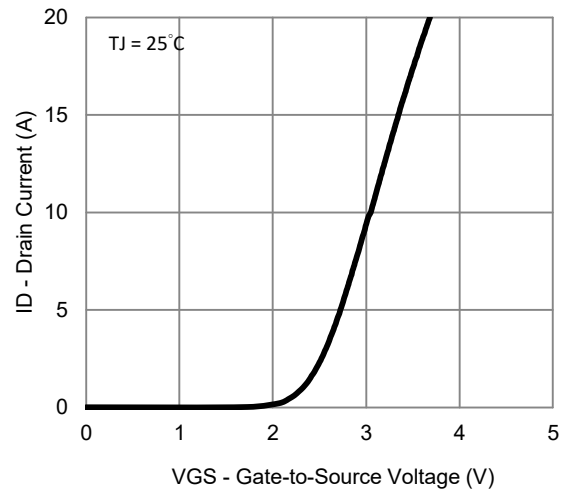
4. Guaranteed by design, not subject to production testing.



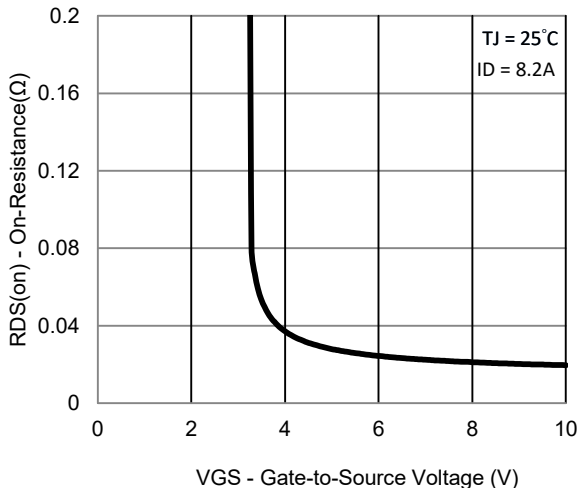
**7. ELECTRICAL CHARACTERISTICS CURVES**



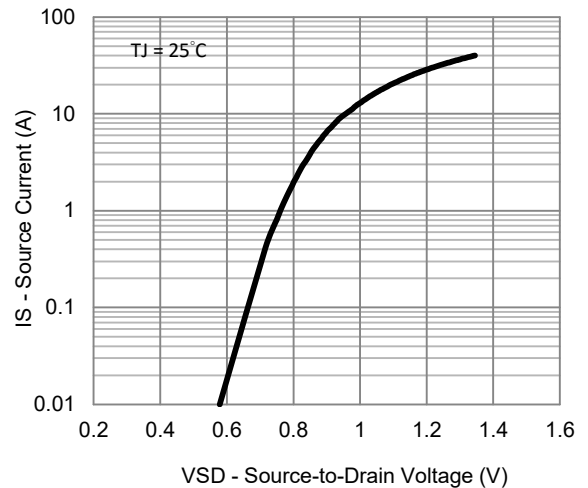
**On-Resistance vs. Drain Current**



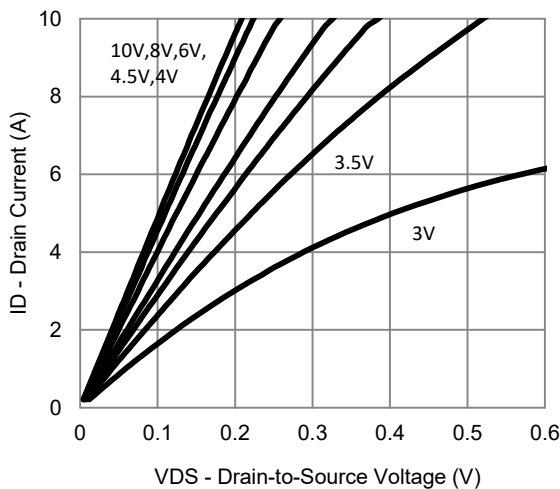
**Transfer Characteristics**



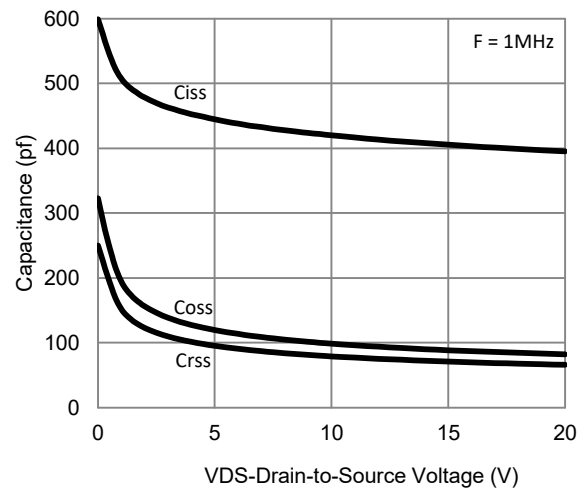
**On-Resistance vs. Gate-to-Source Voltage**



**Drain-to-Source Forward Voltage**



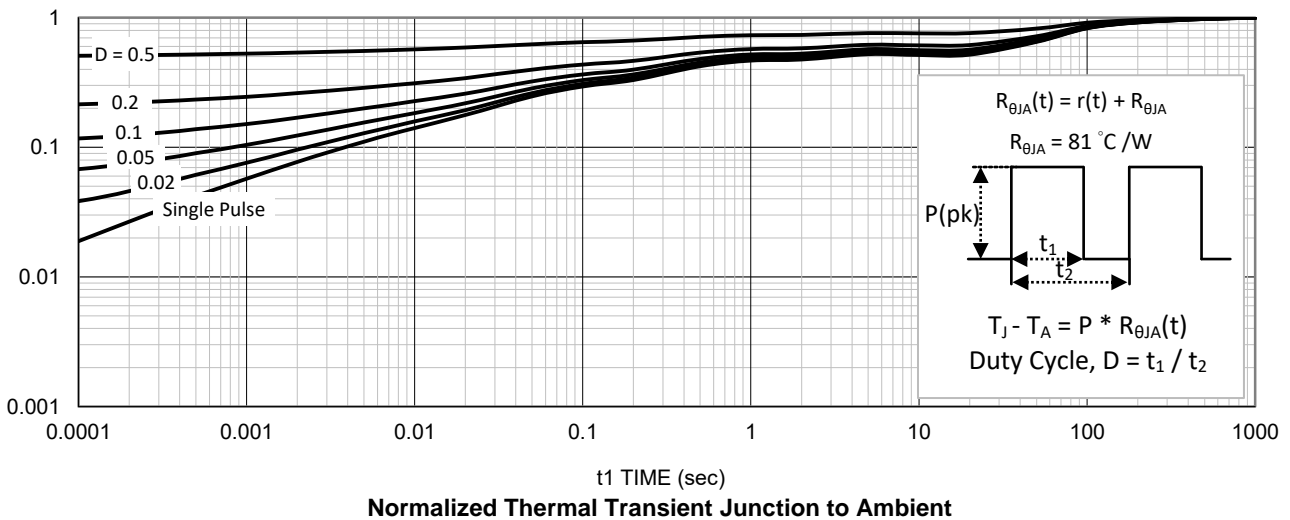
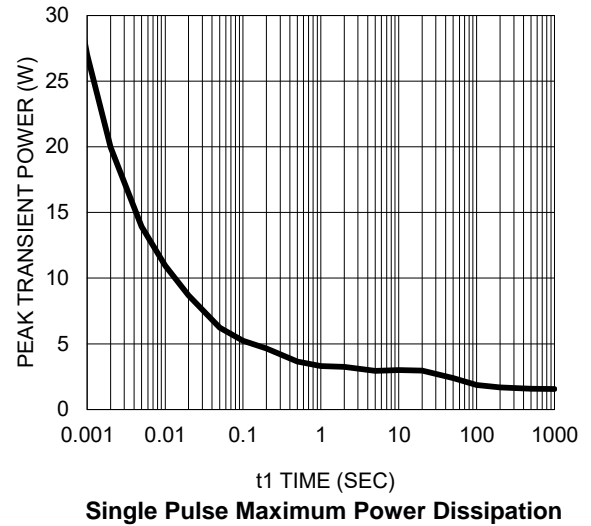
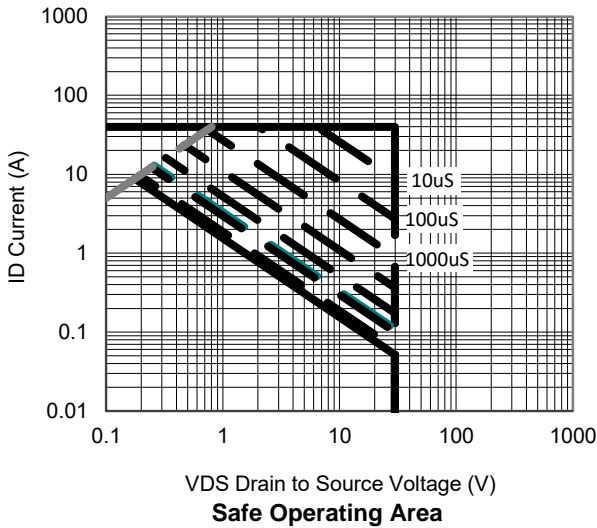
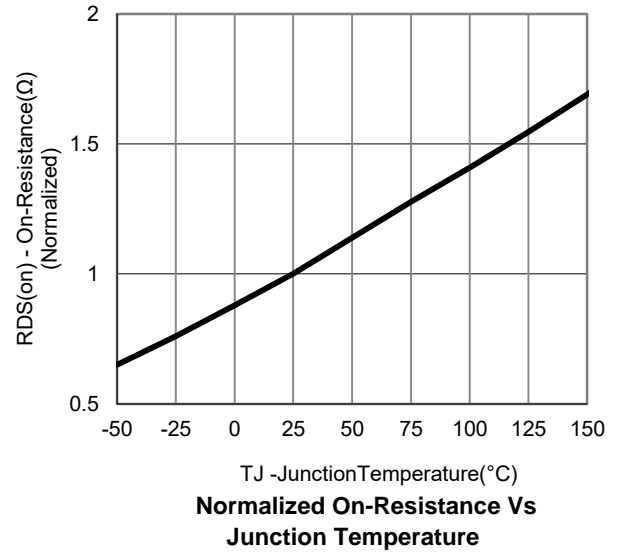
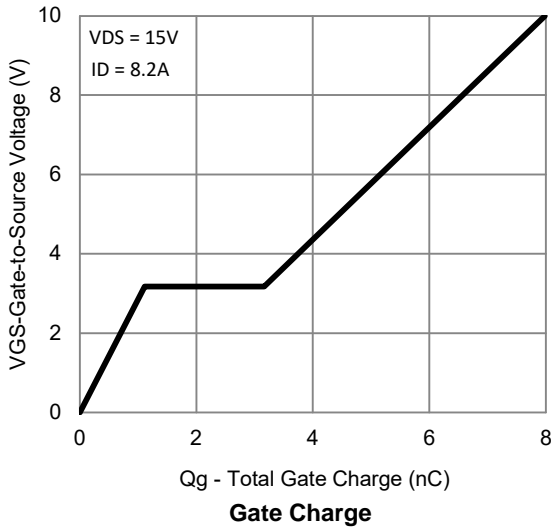
**Output Characteristics**

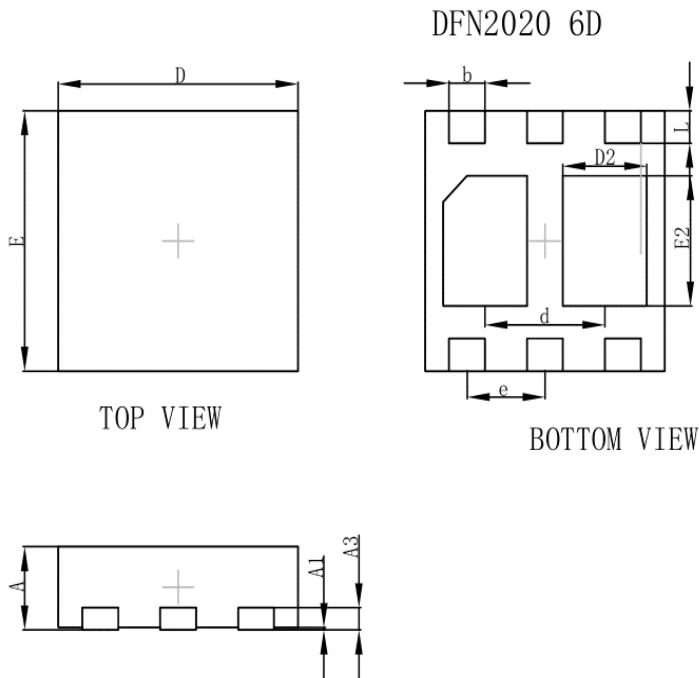


**Capacitance**

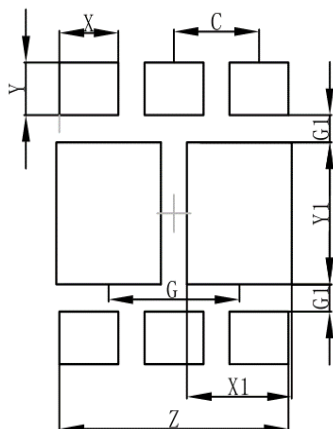


**7. ELECTRICAL CHARACTERISTICS CURVES(Con.)**



**8.OUTLINE AND DIMENSIONS**


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	0.00	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**


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

