Description

This 20V 8A N-Channel MOSFET in a DFN2×2-6L Plastic Package.

Features

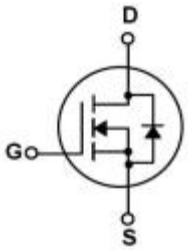
- V_{DS} (V) =20V
- I_D = 8 A (V_{GS} =±12V)
- Halogen-free Product

Applications

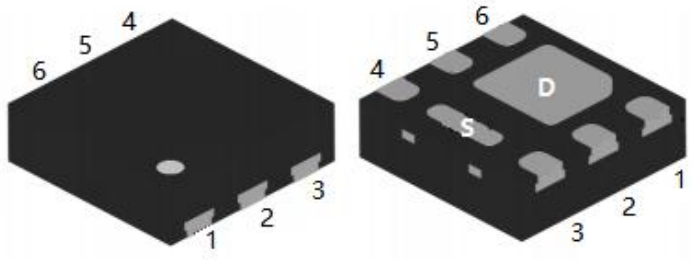
- Suited for low voltage applications such as automotive.
- DC/DC Converters.
- High efficiency switching for power management in portable and battery operated products.

V_{DSS}	$R_{DS(on)}$（Typ)	I_D
20V	12.5mΩ	8A

Equivalent Circuit



Pinning



出脚	定义
Pin1	D
Pin2	D
Pin3	G
Pin4	S
Pin5	D
Pin6	D

Marking

See Marking Instructions

Absolute Maximum Ratings(Ta=25℃)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	20	V
Drain Current		I_D(Tc=25℃)	8	A
Gate-Source Voltage		V_{GS}	±12	V
Avalanche Current		I_{AS}	12	A
Single Pulsed Avalanche Energy		E_{AS}	115	mJ
Power Dissipation		P_D(Tc=25℃)	2.8	W
Junction Temperature Range		T_j	150	℃
Storage Temperature Range		T_{stg}	-55～150	℃
Maximum Junction-to-Ambient	t≤10s	RθJA	45	℃/W
	Steady-State	RθJA	80	

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	20	22		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V V_{GS}=0V			1.0	μA
		V_{DS}=20V T_J=150℃			50	
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±12V V_{DS}=0V			±0.1	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=8.0A		12.5	14	mΩ
		V_{GS}=4.5V I_D=8.0A		13.9	20	mΩ
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	0.4	0.8	1.2	V
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_F=1.0A		0.7	1.2	V
Signal Source Resistance	Rg	F=1MHz		3.3		Ω
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		460		pF
Output Capacitance	C_{oss}			75		
Reverse Transfer Capacitance	C_{rss}			65		
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=10V V_{GS}=4.5V R_L=1.25Ω R_{GEN}=3Ω		2.7		ns
Turn-On Rise Time	t_r			3		
Turn-Off Delay Time	$t_{d(off)}$			37		
Turn-Off Fall Time	t_f			7		
Total Gate Charge	Q_g	V_{DS}=10V V_{GS}=4.5V I_D=8A		12.5		nC
Gate-Source Charge	Q_{gs}			1.2		
Gate-Drain Charge	Q_{gd}			2.7		

Electrical Characteristic Curve

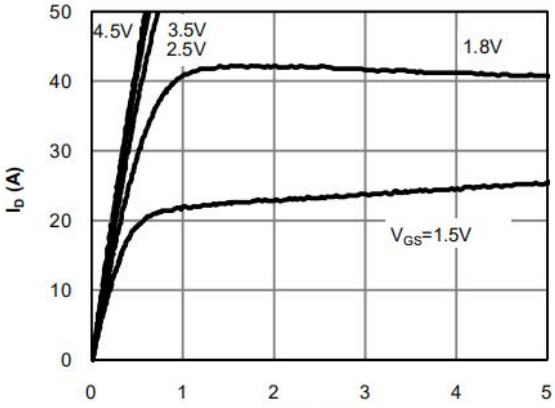


Fig 1: On-Region Characteristics

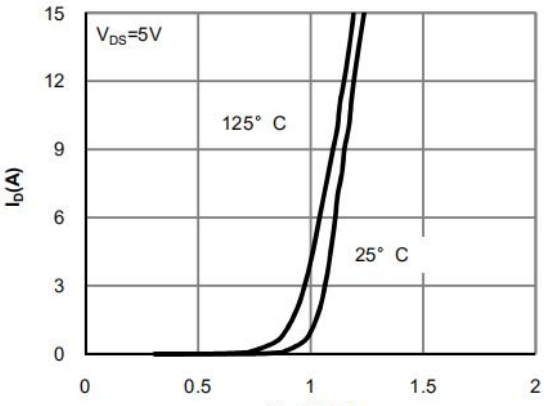


Figure 2: Transfer Characteristics

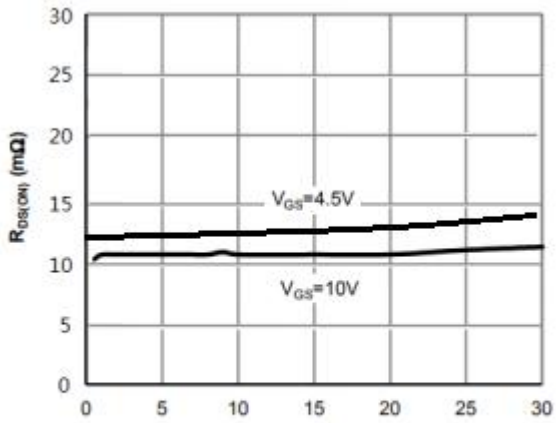


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

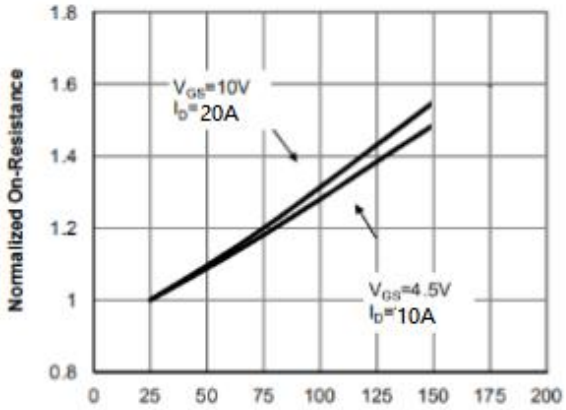


Figure 4: On-Resistance vs. Junction Temperature

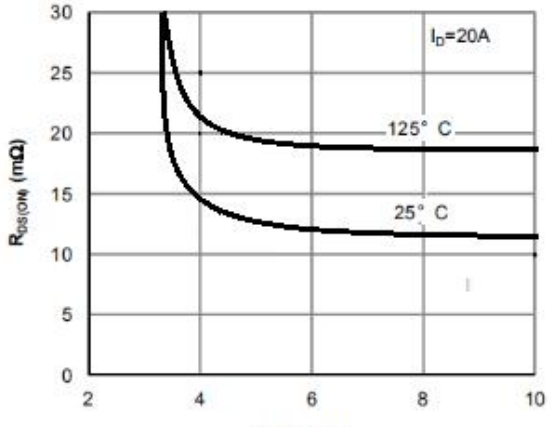


Figure 5: On-Resistance vs. Gate-Source Voltage

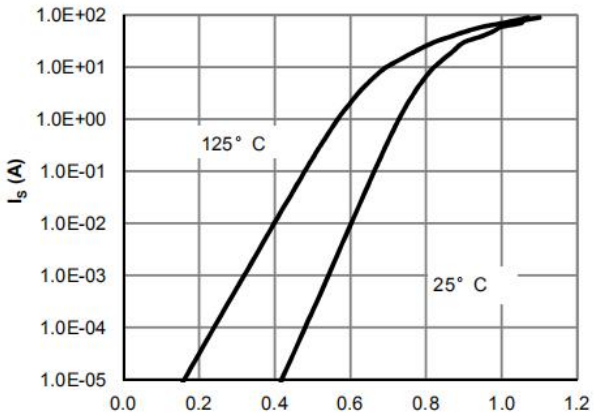


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

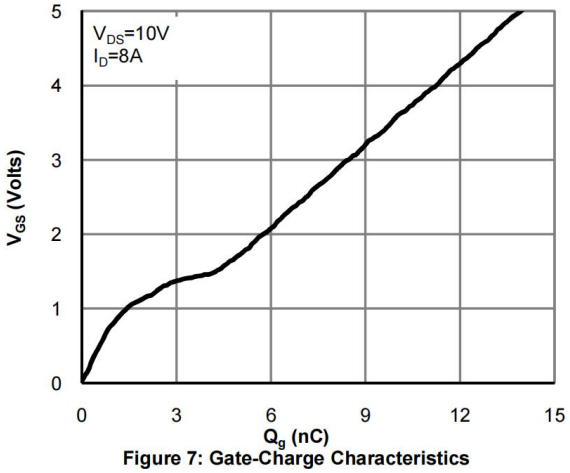


Figure 7: Gate-Charge Characteristics

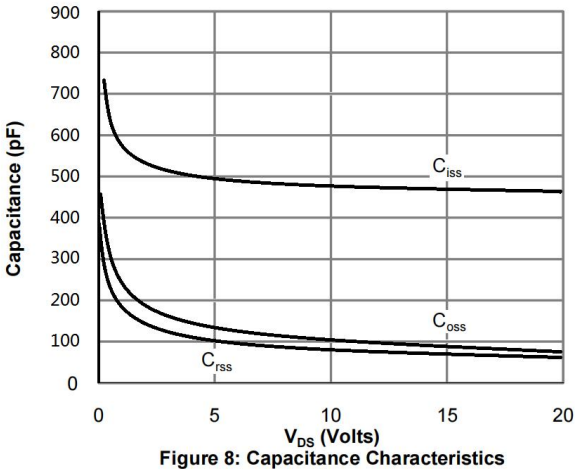


Figure 8: Capacitance Characteristics

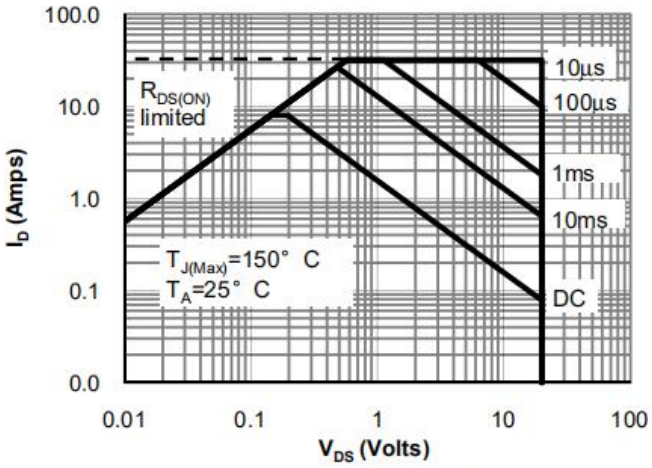


Figure 9: Maximum Forward Biased Safe Operating Area

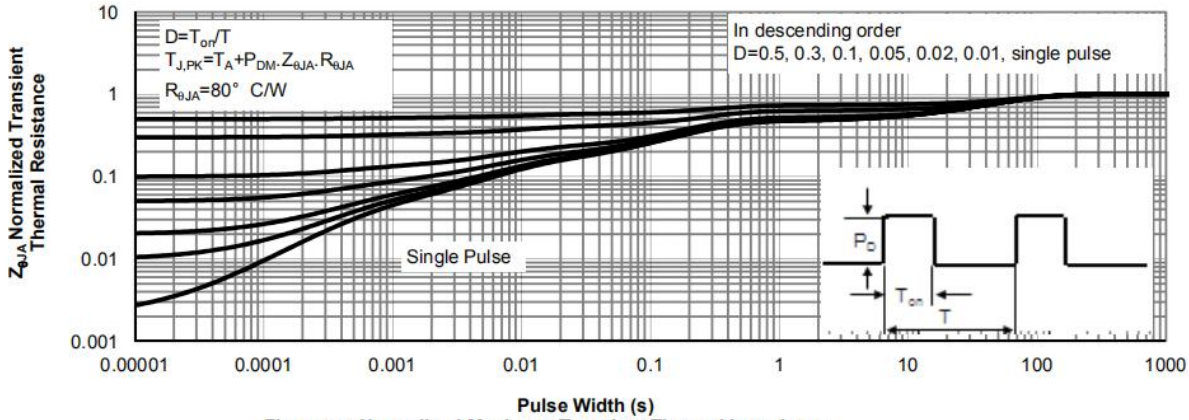
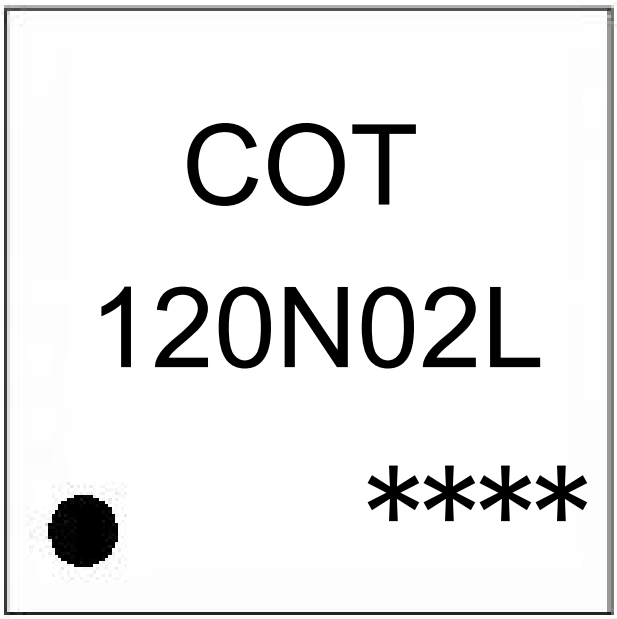


Figure10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

COT: Company Code.

120N02L: Product Type

****: Lot No. Code, code change with Lot No.

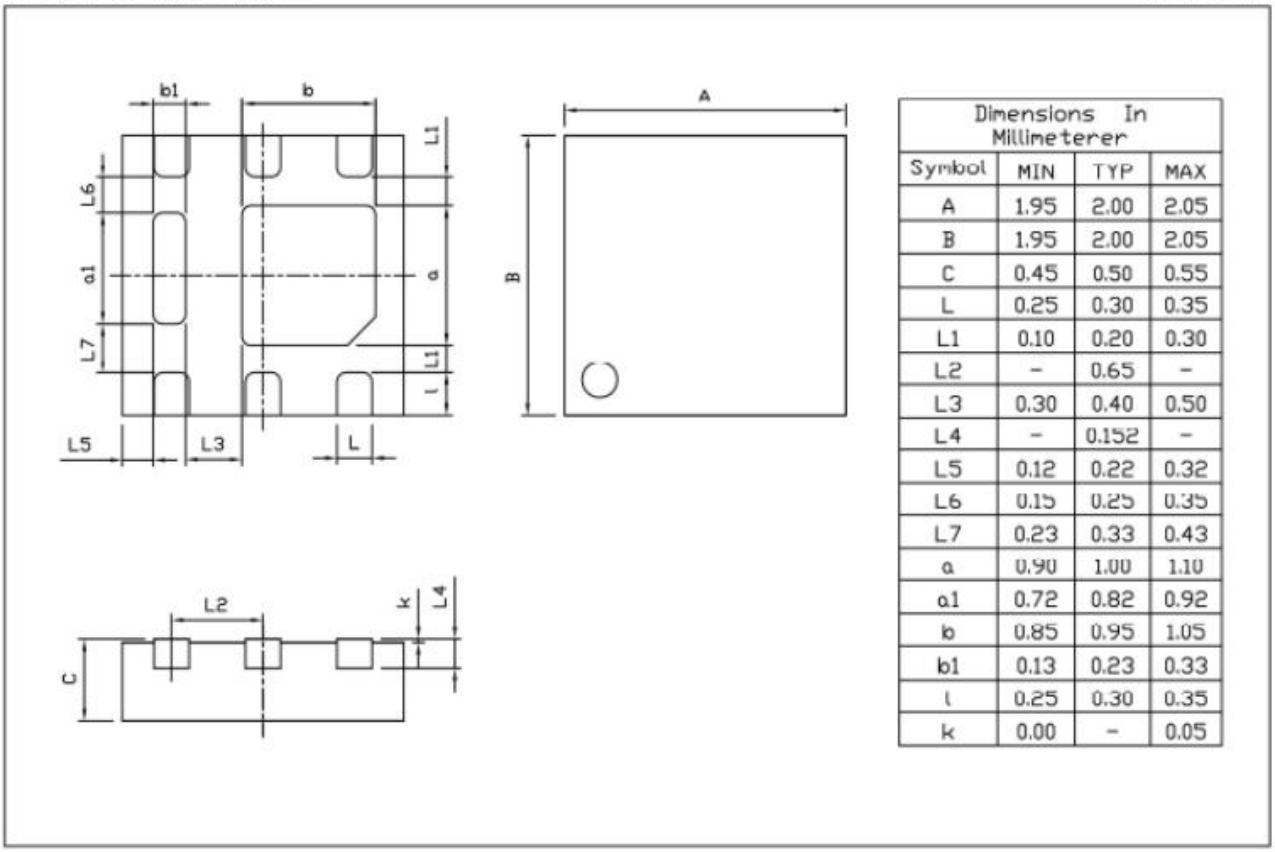
Packaging SPEC.

REEL INFORMATION

Package Type	Units					Dimension (unit：mm³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
DFN2×2-6L	4,000	10	40,000	4	160,000	7″ ×8	210×205×205	445×230×435

Package Outline Dimensions

DFN2×2-6L-0.5 Unit:mm



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	1.95	2.00	2.05
B	1.95	2.00	2.05
C	0.45	0.50	0.55
L	0.25	0.30	0.35
L1	0.10	0.20	0.30
L2	-	0.65	-
L3	0.30	0.40	0.50
L4	-	0.152	-
L5	0.12	0.22	0.32
L6	0.15	0.25	0.35
L7	0.23	0.33	0.43
a	0.90	1.00	1.10
a1	0.72	0.82	0.92
b	0.85	0.95	1.05
b1	0.13	0.23	0.33
l	0.25	0.30	0.35
k	0.00	-	0.05