Description

This -12V,-8A P-Channel MOSFET in a DFN2×2-6L Plastic Package.

Applications

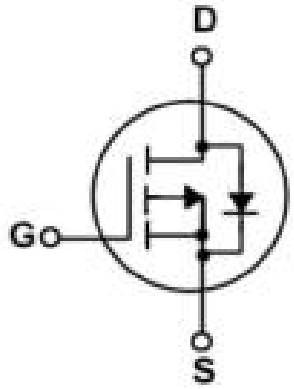
Power Management in Notebook computer, Portable Equipment and Battery powered systems

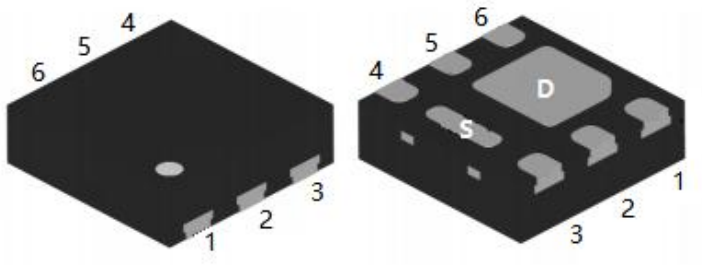
Features

- V_{DS} (V) =-12V
- I_D = -8 A (V_{GS} =±10V)
- Halogen-free Product.

V_{DSS}	$R_{DS(on)}$（Typ)	I_D
-12V	10mΩ	-8A

Equivalent Circuit & Pinning





Pin1，Pin2，Pin5，Pin6：Drain

Pin3：Gate

Pin4：Source

Absolute Maximum Ratings(Ta=25℃)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	-12	V
Gate-Source Voltage		V_{GSS}	±10	V
Continuous Drain Current		I_D (T_a=25°C)	-8	A
Continuous Drain Current		I_D (T_a=70°C)	-6	A
Pulsed Drain Current		I_{DM}	-32	A
Avalanche Current		I_{AS}	15.1	A
Avalanche energy L=0.5mH		E_{AS}	239.4	mJ
Power Dissipation for Single Operation		P_D (T_a=25℃)	2.8	W
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 ~ 150	℃
Maximum Junction-to-Ambient	t≤10s	$R_{\theta JA}$	45	℃/W
	Steady-State	$R_{\theta JA}$	80	

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA V_{GS}=0V	-12	-17		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-12V V_{GS}=0V			-1.0	μA
		V_{DS}=-9.6V V_{GS}=0V T_J=55°C			-5.0	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V V_{GS}=±10V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_D=-250μA	-0.4	-0.7	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V I_D=-10A		10	12	mΩ
		V_{GS}=-4.5V I_D=-8A		11.5	14	
		V_{GS}=-2.5V I_D=-5A		15.8	18	
Diode Forward Voltage	V_{SD}	I_S=-1A V_{GS}=0V		-0.74	-1.0	V
Gate Resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		6.7		Ω
Input Capacitance	C_{iss}	V_{DS}=-15V V_{GS}=0V f=1.0MHz		2110		pF
Output Capacitance	C_{oss}			550		
Reverse Transfer Capacitance	C_{rss}			385		
Total Gate Charge	Q_g	V_{GS}=-4.5V V_{DS}=-6V I_D=-10A		12.7		nC
Gate-Source Charge	Q_{gs}			1.7		
Gate-Drain Charge	Q_{gd}			3.4		
Turn-on Delay Time	$t_{d(ON)}$	V_{GS}=-4.5V V_{DS}=-6V R_L=0.67Ω R_{GEN}=3Ω		11		ns
Turn-on Rise Time	t_r			25		
Turn-off Delay Time	$t_{d(OFF)}$			70		
Turn-off Fall Time	t_f			41.5		

Electrical Characteristic Curve

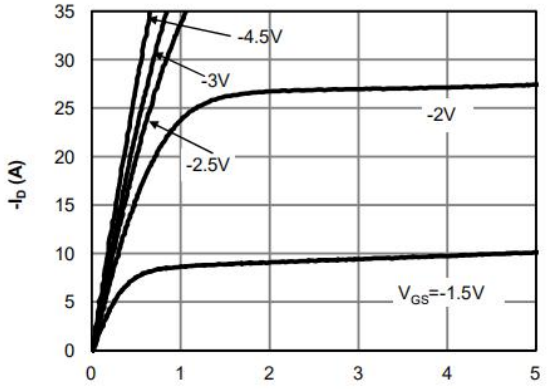


Fig 1: On-Region Characteristics

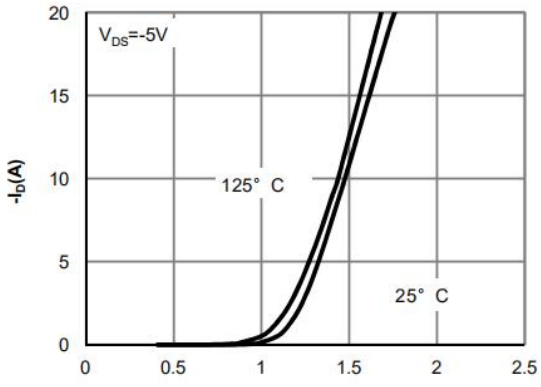


Figure 2: Transfer Characteristics

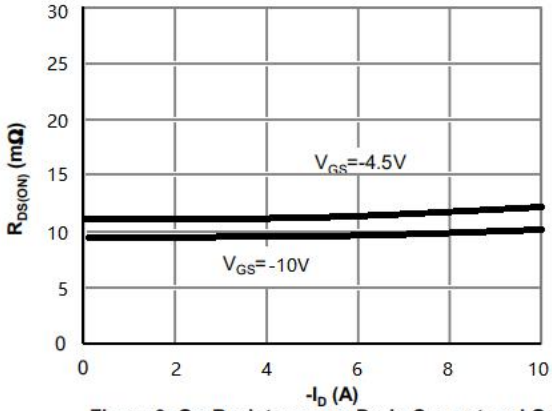


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

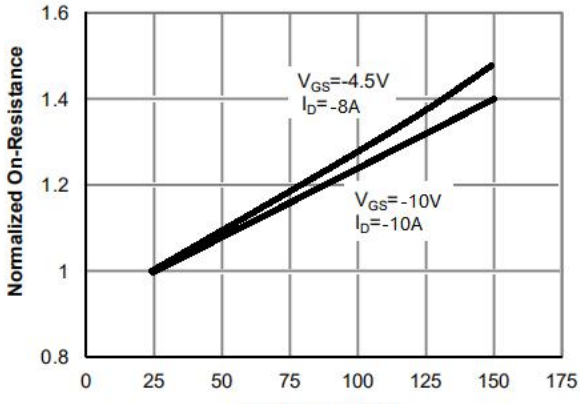


Figure 4: On-Resistance vs. Junction Temperature

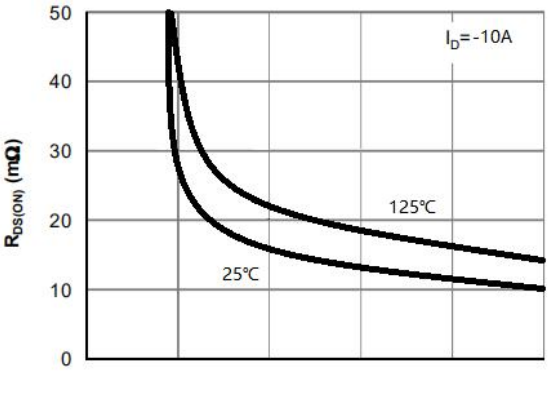


Figure 5: On-Resistance vs. Gate-Source Voltage

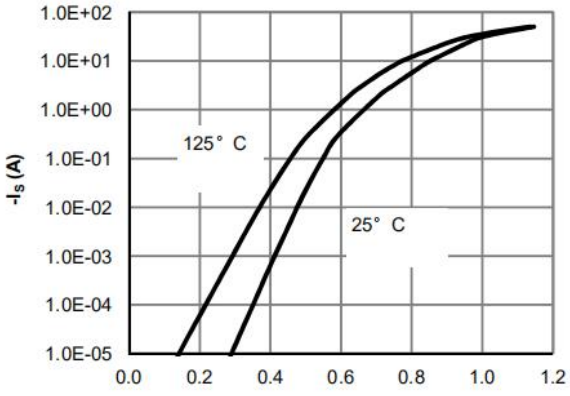


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

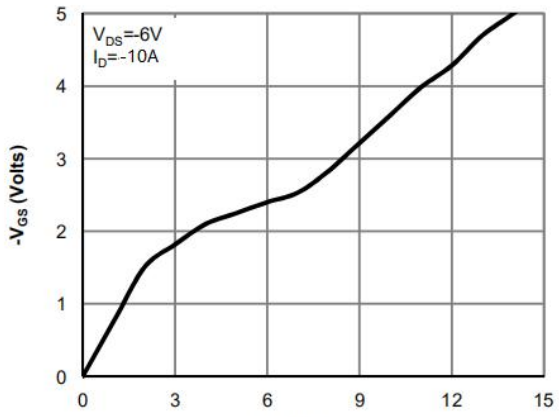


Figure 7: Gate-Charge Characteristics

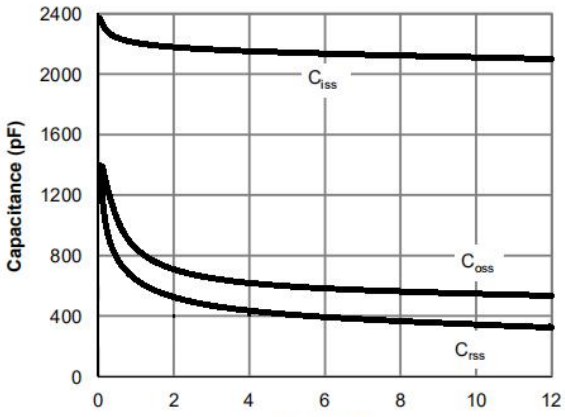


Figure 8: Capacitance Characteristics

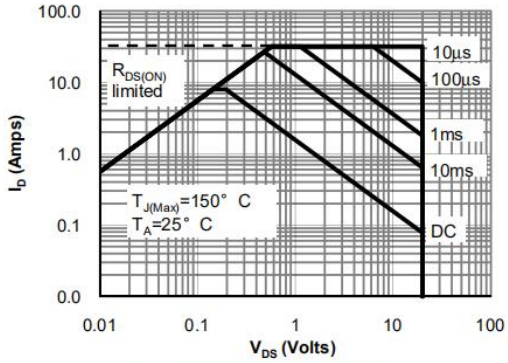


Figure 9: Maximum Forward Biased Safe Operating Area

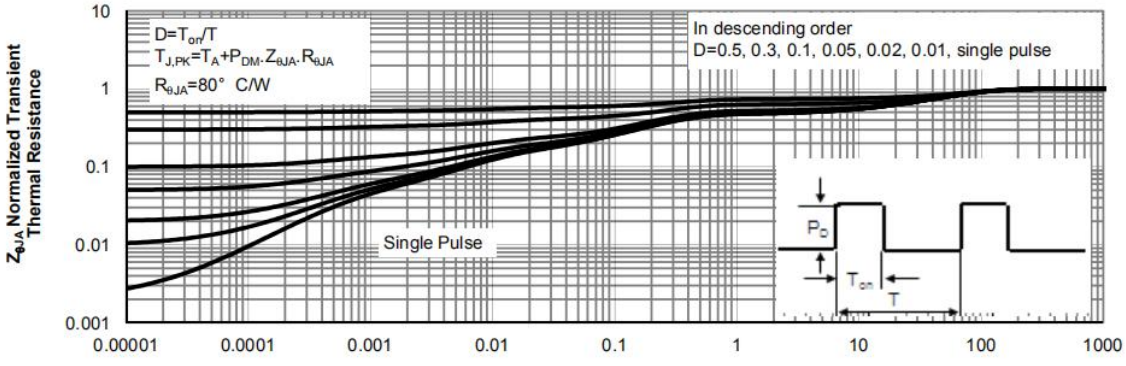
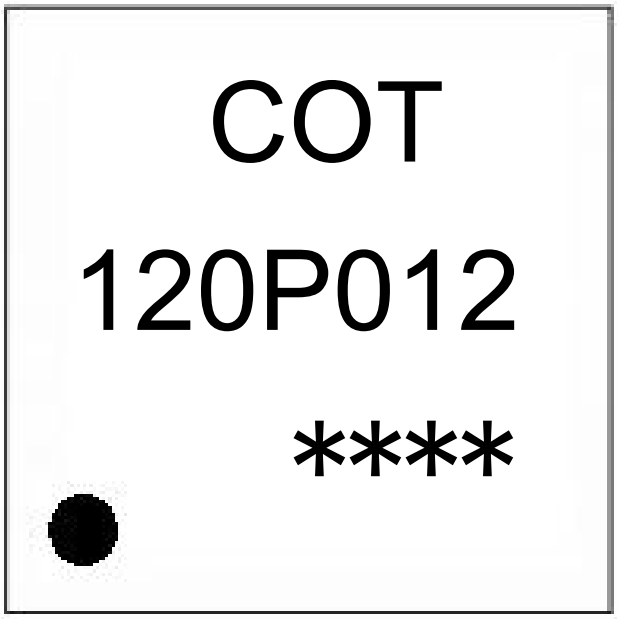


Figure10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

COT:	Company Code.
120P012:	Product Type
****:	Lot No. Code, code change with Lot No.

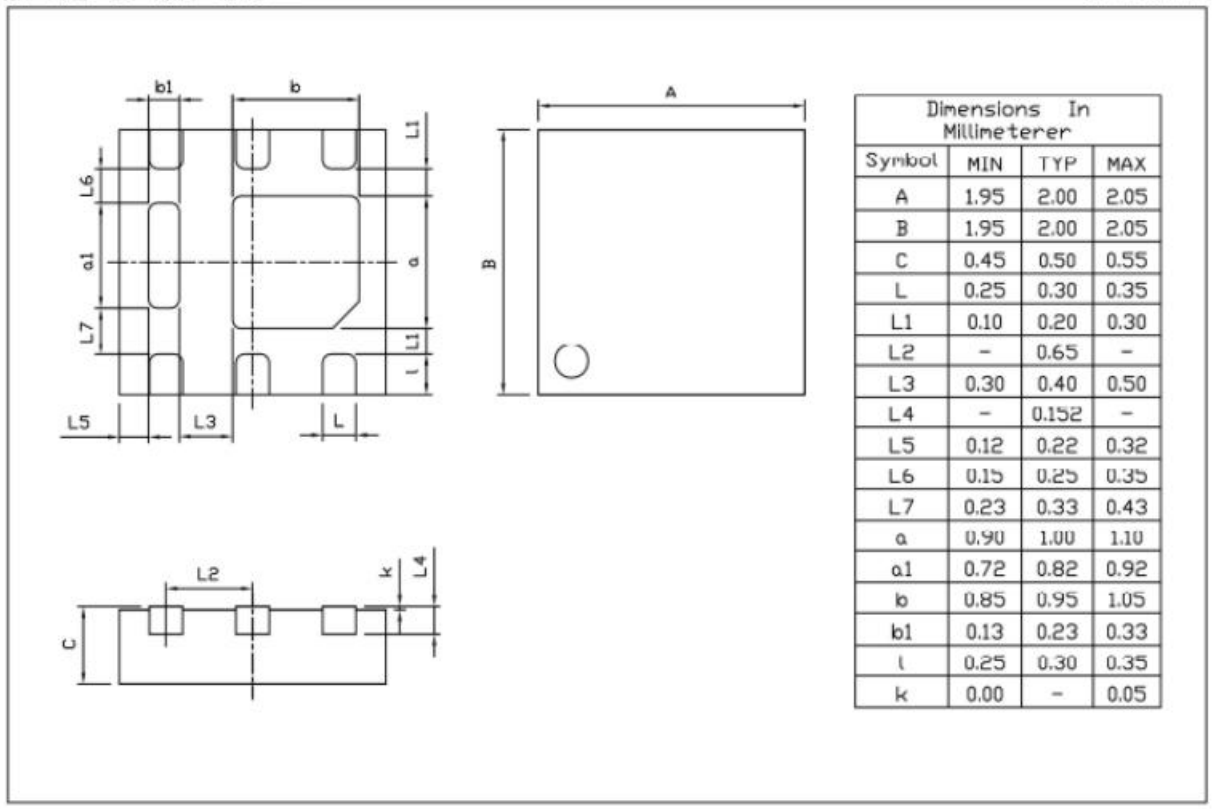
Packaging SPEC.

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