

Descriptions

This is -16V -39A P-CHANNEL MOSFET in a PDFN3×3A-8L Plastic Package.

Features

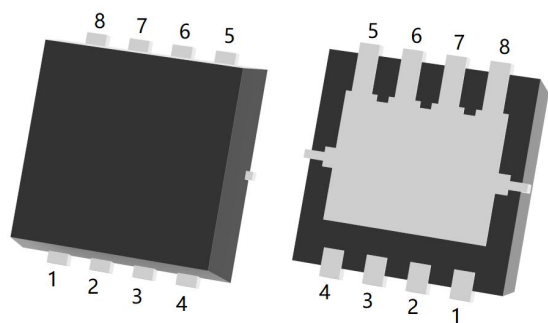
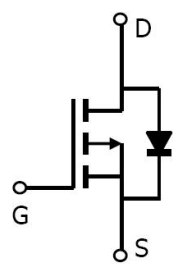
HF Product

Parameter	Value	Unit
V _{DS}	-16	V
I _D	-39	A
R _{DS(ON)(MAX)} @-4.5V	11	mΩ
R _{DS(ON)(MAX)} @-2.5V	15	mΩ

Applications

- Notebook AC-in load switch
- Battery protection charge/discharge

Equivalent Circuit & Pinning



出脚	定义
Pin1	S
Pin2	S
Pin3	S
Pin4	G
Pin5	D
Pin6	D
Pin7	D
Pin8	D

PDFN3×3A-8L

Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-16	V
Drain Current - Continuous		$I_D(T_c=25^\circ\text{C})$	-39	A
Drain Current – Pulsed		I_{DM}	-104	A
Gate-Source Voltage		V_{GS}	± 12	V
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	25	W
Single Pulse Avalanche Energy(L=0.5mH)		E_{AS}	140	mJ
Avalanche Current		I_{AS}	14.5	A
Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Thermal resistance, junction - ambient	$t \leq 10s$	$R_{\theta JA}$	27	°C/W
	Steady-State		60	
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	5	

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu A$ $V_{GS} = 0V$	-16	-19		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12.8V$ $V_{GS} = 0V$			-1	μA
Gate-Body leakage current	I_{GSS}	$V_{DS} = 0V$, $V_{GS} = \pm 12V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$ $I_D = -250\mu A$	-0.5	-0.6	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V$, $I_D = -15A$		10	11	m Ω
		$V_{GS} = -2.5V$, $I_D = -10A$		13.8	15	
		$V_{GS} = -1.8V$, $I_D = -5A$		20		
Diode Forward Voltage	V_{SD}	$I_S = -1A$, $V_{GS} = 0V$			-1.2	V
Input Capacitance	C_{iss}	$V_{DS} = -15V$ $V_{GS} = 0V$ $f = 1.0MHz$		2000		pF
Output Capacitance	C_{oss}			280		
Reverse Transfer Capacitance	C_{rss}			260		
Gate resistance	R_g	$V_{GS} = 0V$ $V_{DS} = 0V$ $f = 1MHz$		22		Ω
Total Gate Charge	Q_g	$V_{GS} = -4.5V$, $V_{DS} = -10V$, $I_D = -14A$		32		nC
Gate Source Charge	Q_{gs}			8		
Gate Drain Charge	Q_{gd}			12		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = -4.5V$ $V_{DS} = -10V$ $R_L = 0.75\Omega$ $R_{GEN} = 3\Omega$		23		ns
Turn-On Rise Time	t_r			20		
Turn-Off Delay Time	$t_{d(off)}$			90		
Turn-Off Fall Time	t_f			50		

Electrical Characteristic Curve

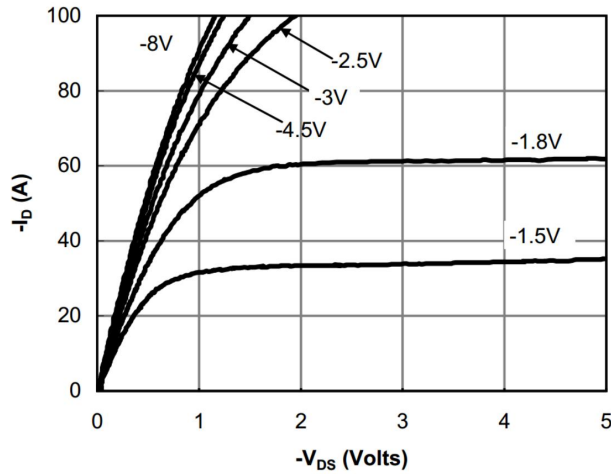


Fig 1: On-Region Characteristics

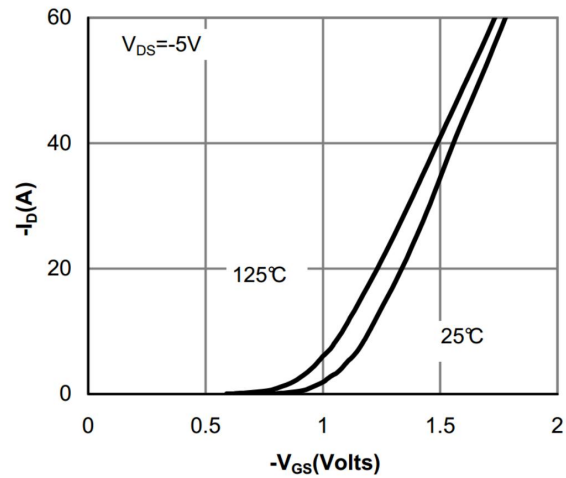


Figure 2: Transfer Characteristics

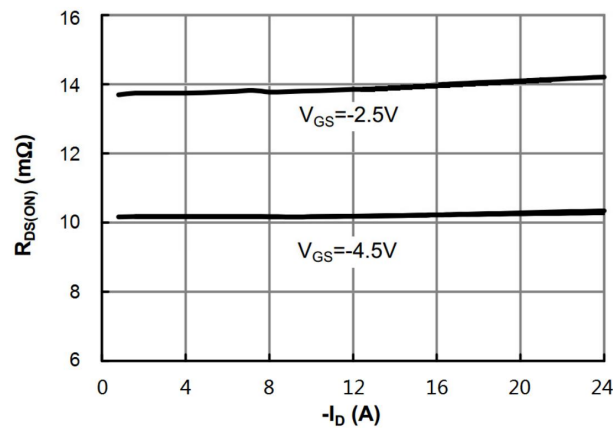


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

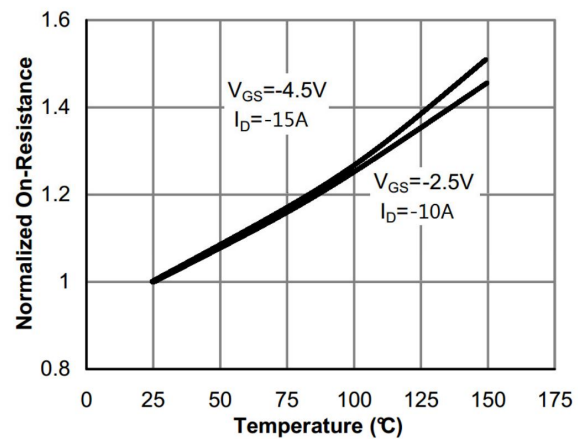


Figure 4: On-Resistance vs. Junction Temperature

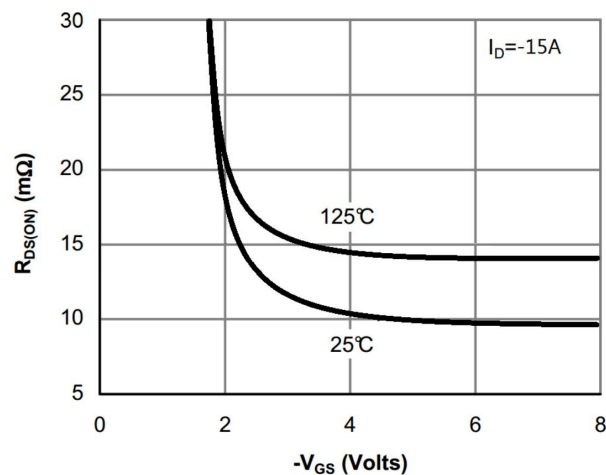


Figure 5: On-Resistance vs. Gate-Source Voltage

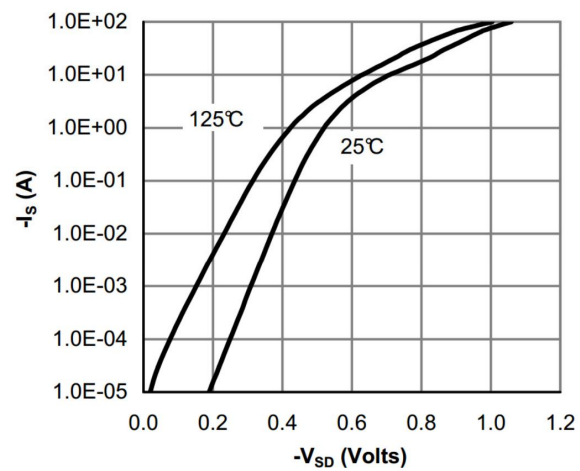


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

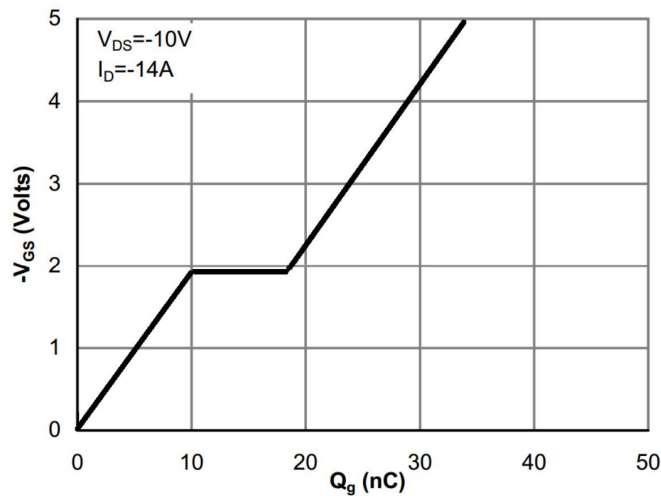


Figure 7: Gate-Charge Characteristics

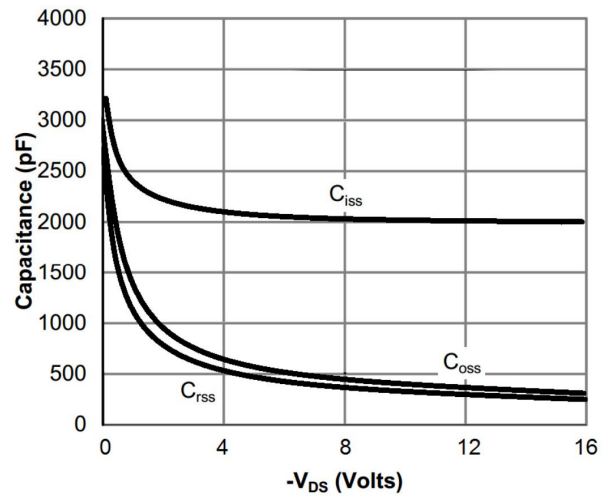


Figure 8: Capacitance Characteristics

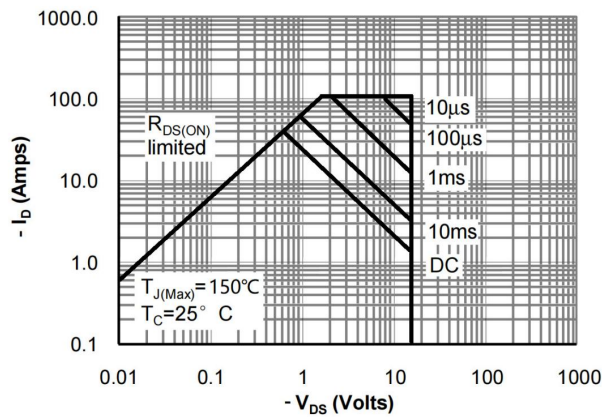


Figure 9: Maximum Forward Biased Safe Operating Area

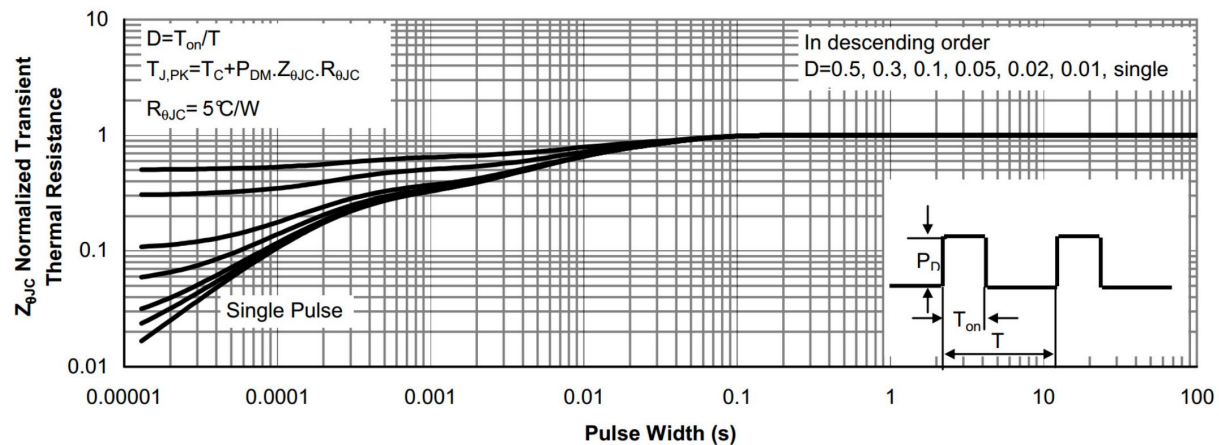
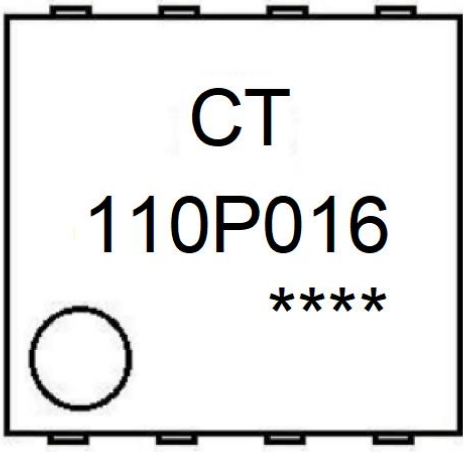


Figure 10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:
CT: Company Code
110P016: Product Type Code
****: Lot No. Code, code change with Lot No

Packaging SPEC

REEL

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
PDFN3×3A-8L	5,000	2	10,000	6	60,000	13" ×12	360×360×50	380×335×366

Package Outline Dimensions

PDFN3X3A-8L Unit:mm

