

Descriptions

This -30V -45A P-Channel Enhancement Mode Field Effect Transistor in a PDFN 3×3A-8L Plastic Package.

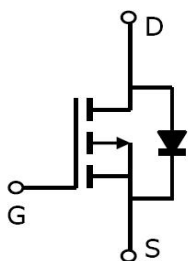
Features

- $V_{DS} (V) = -30V$
- $I_D = -45A$ ($V_{GS} = \pm 20V$)
- $R_{DS(ON)}@-10V \leq 7.5mR$ (Typ. 6.5mR)
- Halogen-free product

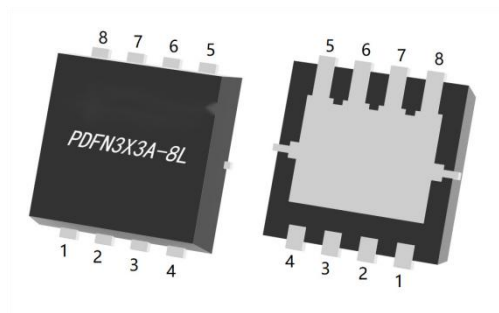
Applications

- 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

Marking

See Marking Instructions.

Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-30	V
Drain Current - Continuous		$I_D(T_c=25^\circ\text{C})$	-45	A
Drain Current – Pulsed		I_{DM}	-126	A
Gate-Source Voltage		V_{GS}	± 20	V
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	30	W
Single Pulse Avalanche Energy(L=0.5mH)		E_{AS}	360	mJ
Avalanche Current(L=0.5mH)		I_{AS}	-30	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C
Thermal resistance, junction - ambient	$t \leq 10\text{s}$	$R_{\theta JA}$	22	°C/W
	Steady-State		55	
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	4.17	

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu A$	$V_{GS} = 0V$	-30	-33		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V$	$V_{GS} = 0V$			-1	μA
Gate-Body leakage current	I_{GSS}	$V_{DS} = 0V$,	$V_{GS} = \pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$	$I_D = -250\mu A$	-1	-1.5	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -10V$, $I_D = -20A$			6.5	7.5	m Ω
		$V_{GS} = -4.5V$, $I_D = -10A$			9.3	15	
Diode Forward Voltage	V_{SD}	$I_S = -1A$, $V_{GS} = 0V$				-1.2	V
Input Capacitance	C_{iss}	$V_{DS} = -25V$ $V_{GS} = 0V$ $f = 1.0MHz$			3260		pF
Output Capacitance	C_{oss}				335		
Reverse Transfer Capacitance	C_{rss}				330		
Gate resistance	R_g	$V_{GS} = 0V$ $f = 1MHz$	$V_{DS} = 0V$		5.6		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS} = -10V$, $V_{DS} = -15V$, $I_D = -20A$			51		nC
Total Gate Charge	$Q_{g(4.5V)}$				32		
Gate Source Charge	Q_{gs}				11		
Gate Drain Charge	Q_{gd}				13		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = -10V$ $R_L = 0.75\Omega$	$V_{DS} = -15V$ $R_{GEN} = 3\Omega$		12.5		ns
Turn-On Rise Time	t_r				19		
Turn-Off Delay Time	$t_{d(off)}$				125		
Turn-Off Fall Time	t_f				67		

Electrical Characteristic Curve

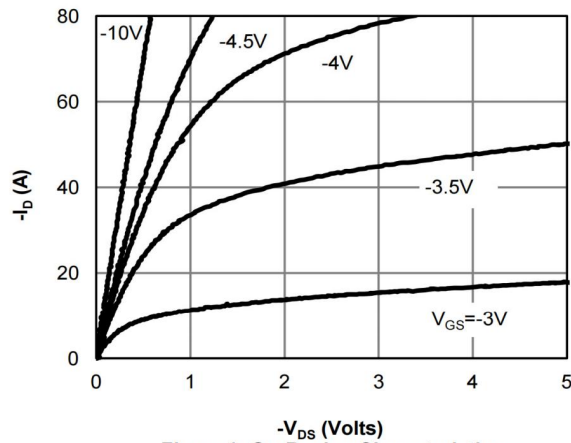


Figure 1: On-Region Characteristics

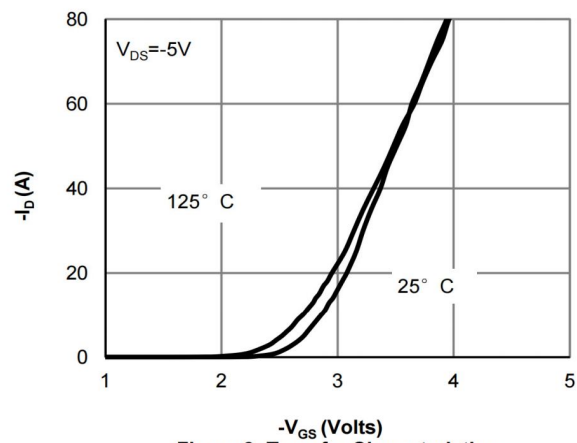


Figure 2: Transfer Characteristics

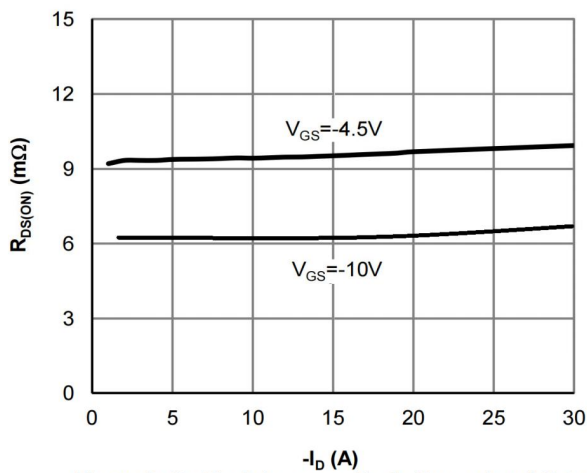


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

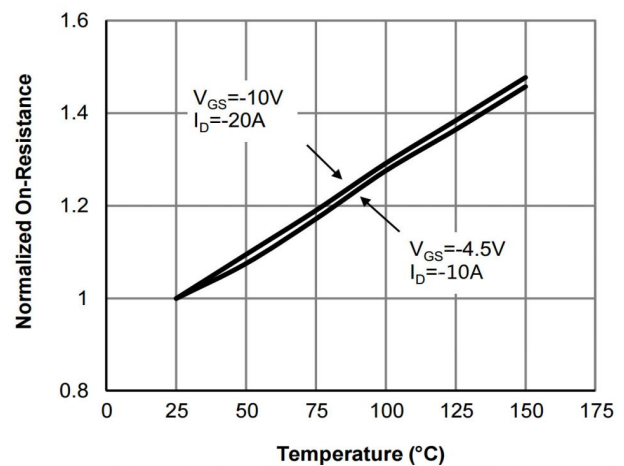


Figure 4: On-Resistance vs. Junction Temperature

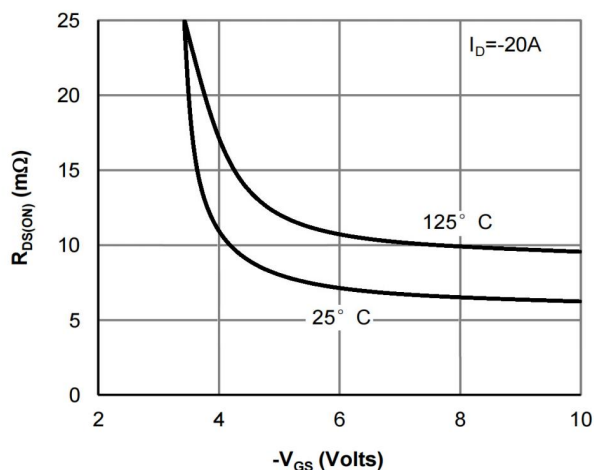


Figure 5: On-Resistance vs. Gate-Source Voltage

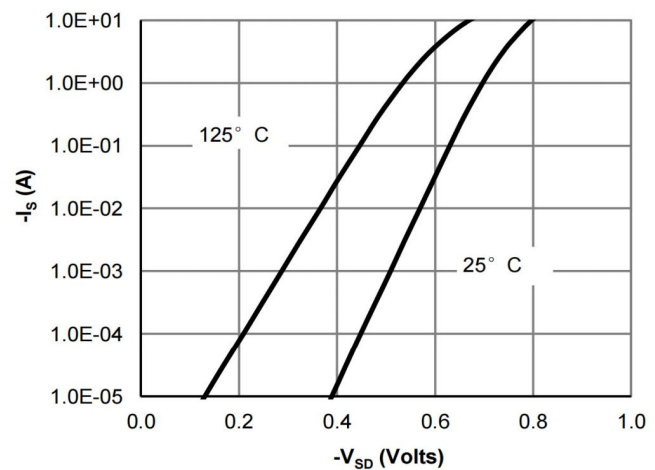
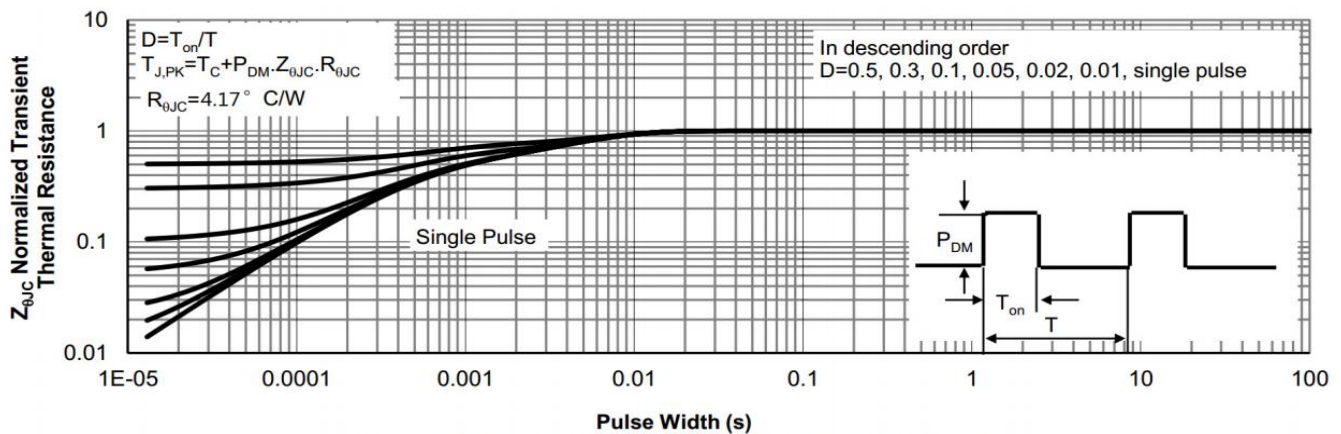
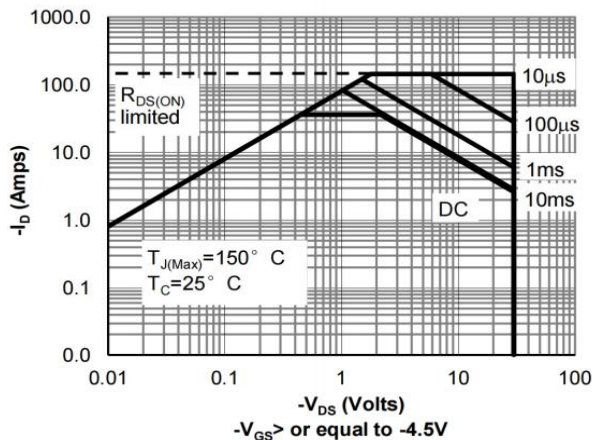
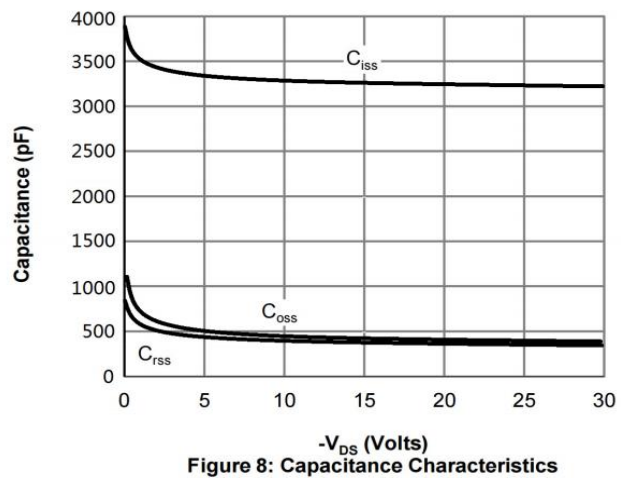
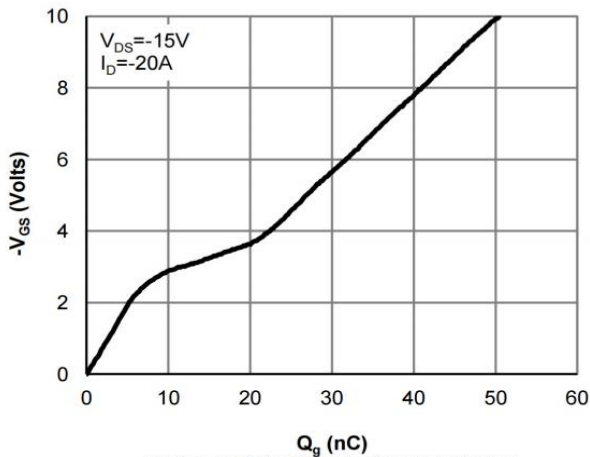
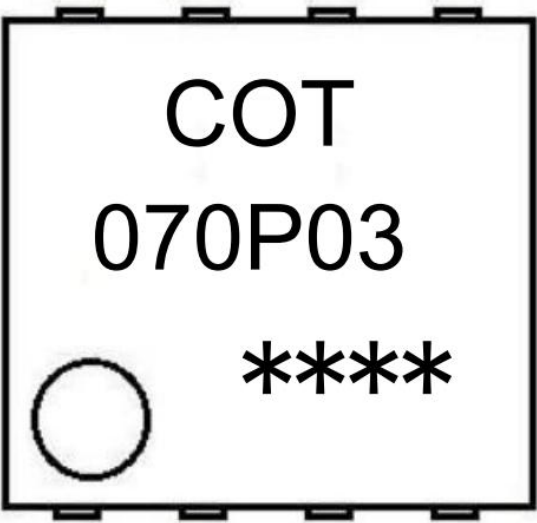


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve



Marking Instructions



Note:
COT: Company Code.
070P03: Product Type Code
****: Lot No. Code, code change with Lot No.

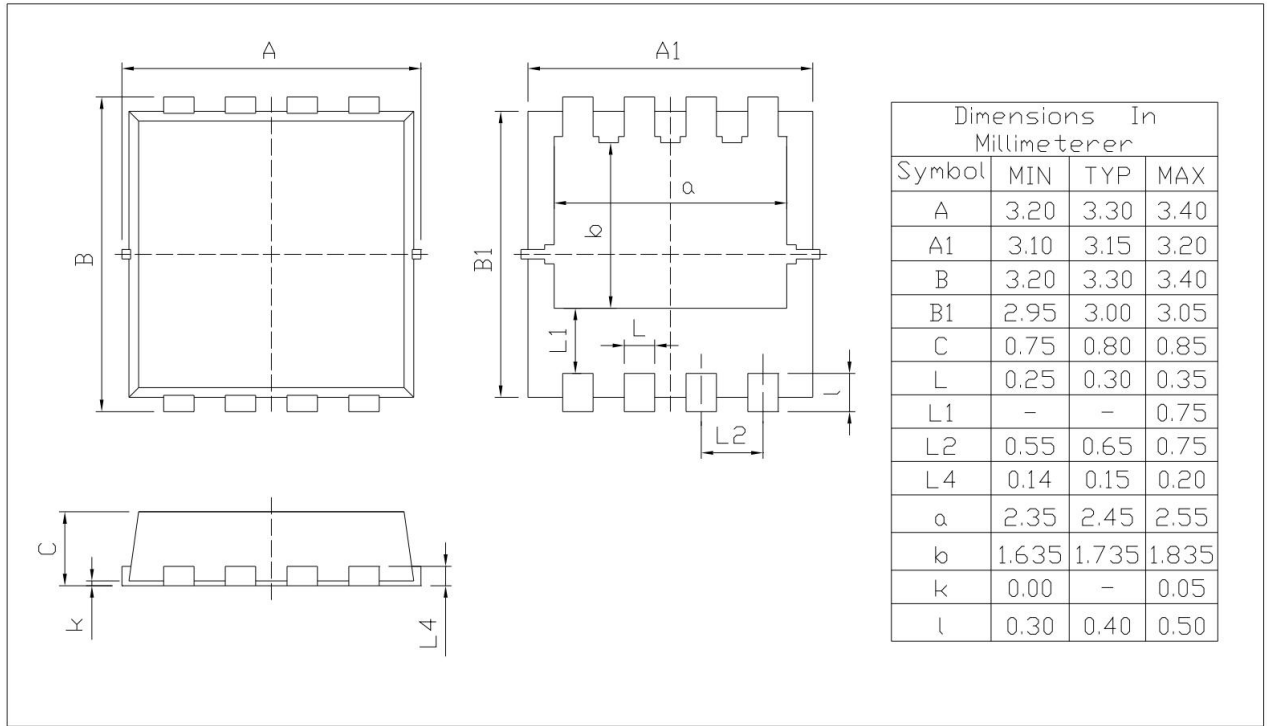
Packaging SPEC

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



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