

Description

This 40V 45A N-channel enhancement mode field effect transistor in a PDFN 3×3A-8L plastic package.

Applications

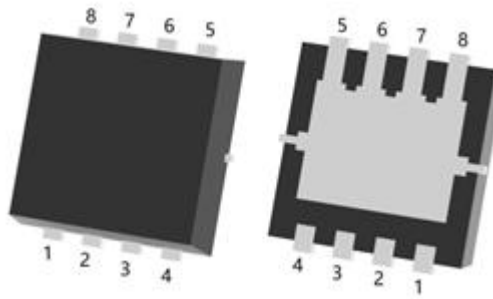
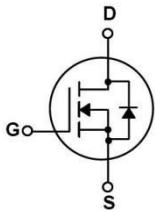
These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

Features

- $V_{DS} (V) = 40V$
- $I_D = 45A (V_{GS} = \pm 20V)$
- $R_{DS(ON)}@10V \leq 8mR (Typ. 6.4mR)$
- Halogen-free product

V_{DSS}	$R_{DS(ON)}$ Typ	I_D
40 V	6.4 m Ω	45A

Equivalent Circuit & Pinning



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

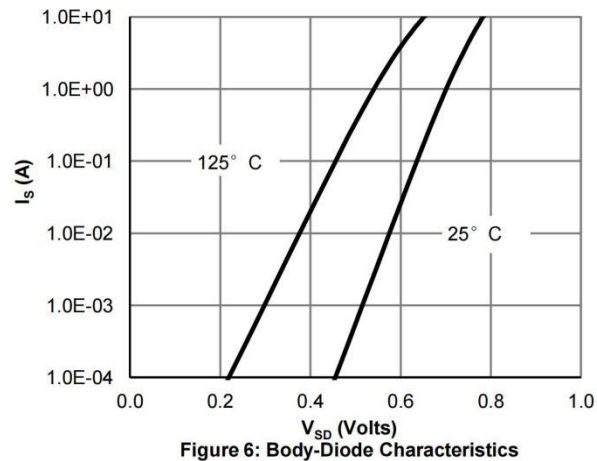
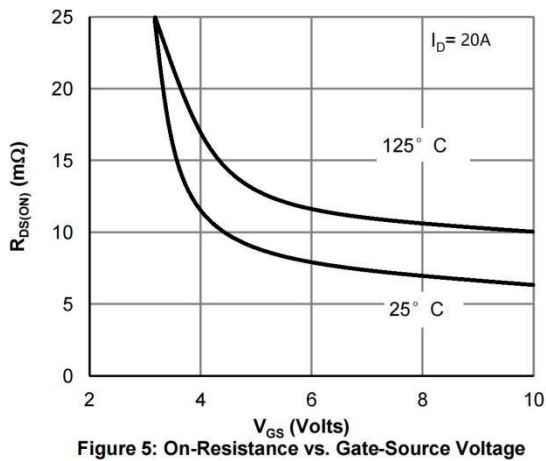
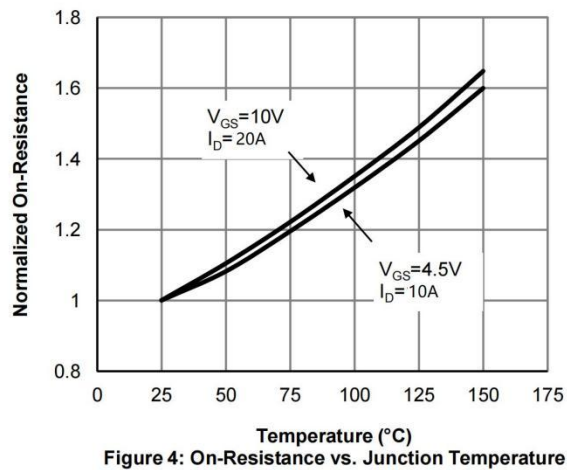
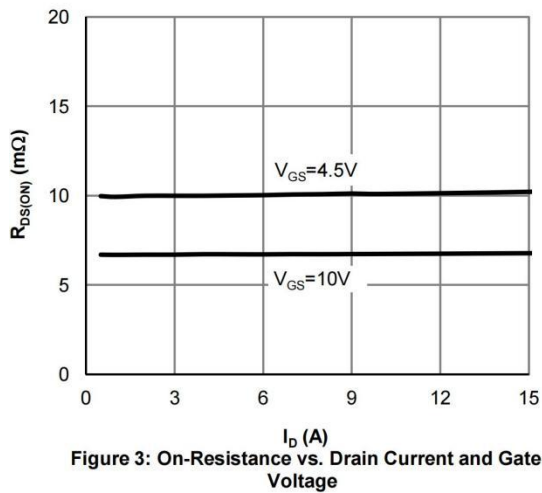
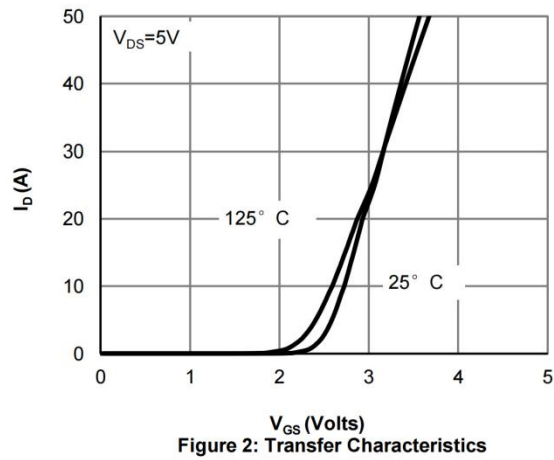
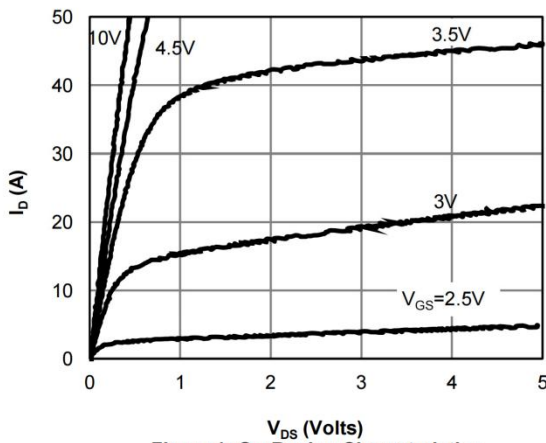
Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Drain Current		$I_D(T_c=25^{\circ}\text{C})$	45	A
Drain Current - Pulsed		I_{DM}	105	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	67.6	mJ
Avalanche Current		I_{AS}	13	A
Power Dissipation		$P_D(T_c=25^{\circ}\text{C})$	27	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^{\circ}\text{C}$
Junction-to-Ambient	$t \leq 10$	$R_{\theta JA}$	25	$^{\circ}\text{C/W}$
Junction-to-Ambient	Steady-State		55	
Junction-to-Case	Steady-State	$R_{\theta JC}$	4.6	

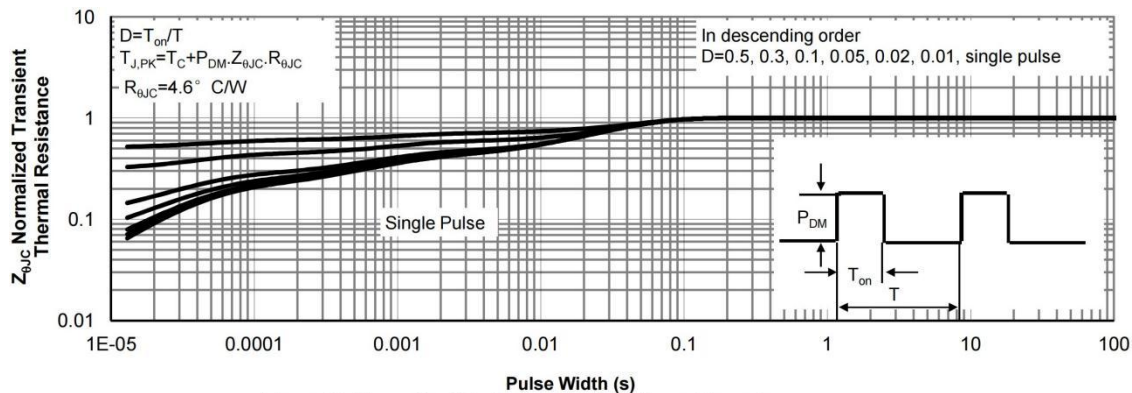
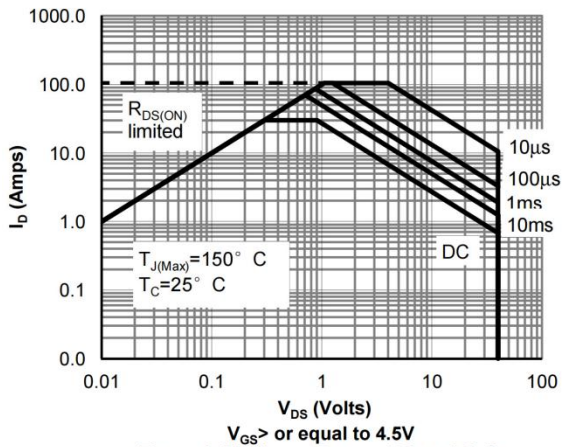
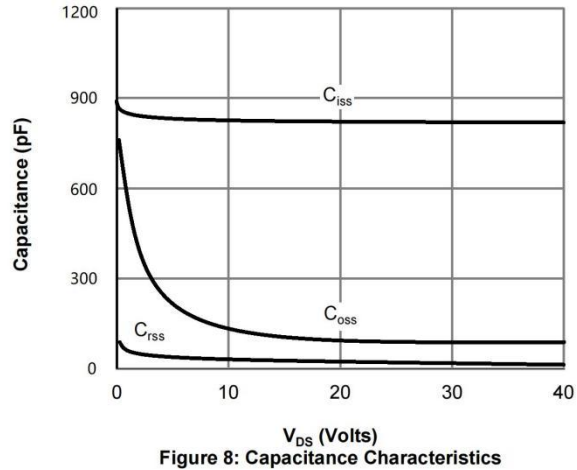
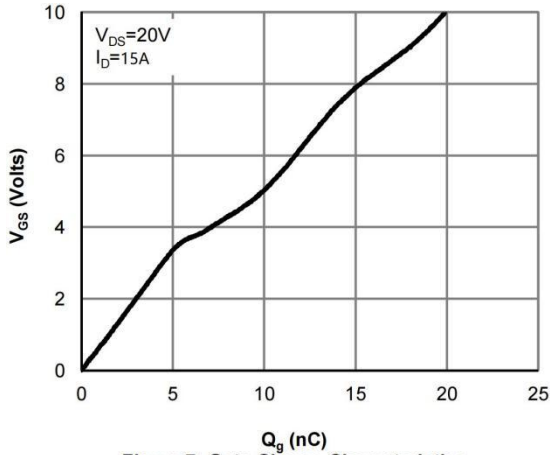
Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	40	47		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		6.4	8	m Ω
		$V_{GS}=4.5V$ $I_D=10A$		9	12	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		850		pF
Output Capacitance	C_{oss}			115		
Reverse Transfer Capacitance	C_{rss}			30		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		2.4		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=20V$ $I_D=15A$		21		nC
Total Gate Charge	$Q_{g(4.5V)}$			8.6		
Gate Source Charge	Q_{gs}			5.7		
Gate Drain Charge	Q_{gd}			3		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=1.18\Omega$ $R_{GEN}=3.0\Omega$		7.5		ns
Turn-On Rise Time	t_r			2.1		
Turn-Off Delay Time	$t_{d(off)}$			23		
Turn-Off Fall Time	t_f			3		

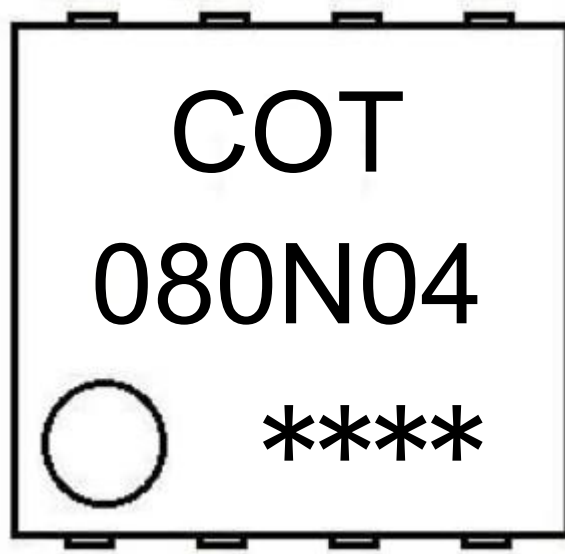
Electrical Characteristic Curve



Electrical Characteristic Curve



Marking Instructions



Note:

COT: Company Code.

080N04: Product Type Code

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

Packaging SPEC.

REEL INFORMATION

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
PDFN 3×3A-8L	5,000	2	10,000	6	60,000	13" ×12	360×360×50	380×335×366

Package Outline Dimensions

PDFN3X3A-8L

Unit:mm

