

Descriptions

This 30V 55A N-channel enhancement mode field effect transistor in a PDFN3×3A-8L plastic package.

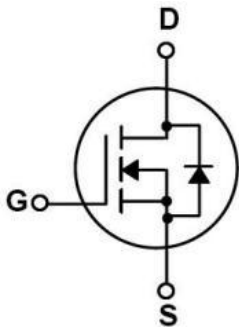
Features

- $V_{DS} (V) = 30V$
- $I_D = 55 A (V_{GS} = \pm 20V)$
- $R_{DS(ON)}@10V \leq 5m\Omega (Typ. 4.3m\Omega)$
- Halogen-free product

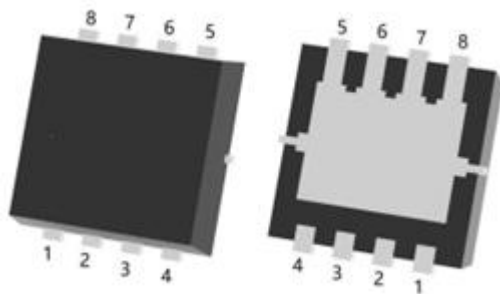
Applications

- Load switch applications
- Battery power management.

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 _{DSS}	30	V
Drain Current	I _D (T _C =25°C)	55	A
Drain Current - Pulsed	I _{DM}	145	A
Gate-Source Voltage	V _{GSS}	±20	V
Single Pulsed Avalanche Energy	E _{AS}	220.9	mJ
Avalanche Current	I _{AS}	23.5	A
Power Dissipation	P _D (T _C =25°C)	30	W
Operating and Storage Temperature Range	T _J , T _{stg}	-55 to 150	°C
Junction-to-Ambient	t ≤ 10	40	°C/W
Junction-to-Ambient	Steady-State		
Junction-to-Case	Steady-State	R _{θJC}	

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250μA	30	35		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V V _{GS} =0V			1	μA
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±20V V _{DS} =0V			±0.1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250μA	1.0	1.8	2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V I _D =20A		4.3	5	mΩ
		V _{GS} =4.5V I _D =10A		6.7	8	mΩ
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		2030		pF
Output Capacitance	C _{oss}			168		
Reverse Transfer Capacitance	C _{rSS}			163		
Gate resistance	R _g	V _{GS} =0V V _{DS} =0V f=1MHz		3.1		Ω
Total Gate Charge	Q _{g(10V)}	V _{GS} =10V V _{DS} =15V I _D =20A		40		nC
Total Gate Charge	Q _{g(4.5V)}			22		
Gate Source Charge	Q _{gs}			11		
Gate Drain Charge	Q _{gd}			5		
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V V _{DS} =15V R _L =0.75Ω R _{GEN} =3.0Ω		11		ns
Turn-On Rise Time	t _r			14		
Turn-Off Delay Time	t _{d(off)}			38		
Turn-Off Fall Time	t _f			10		

Electrical Characteristic Curve

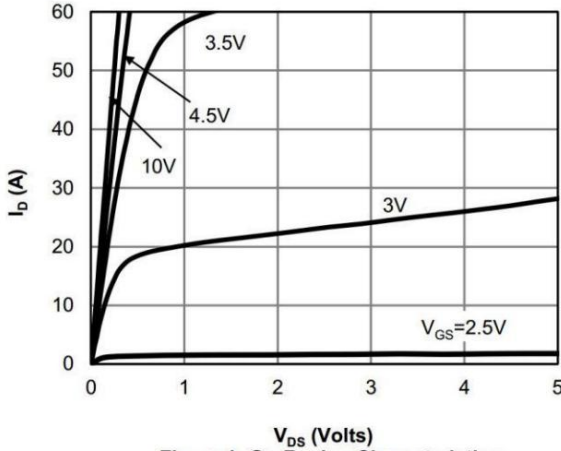


Figure 1: On-Region Characteristics

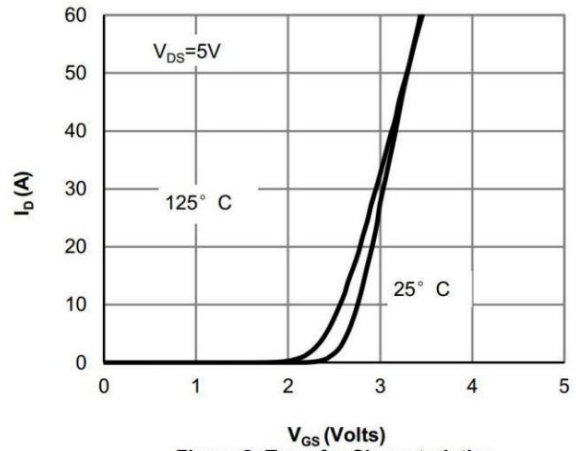


Figure 2: Transfer Characteristics

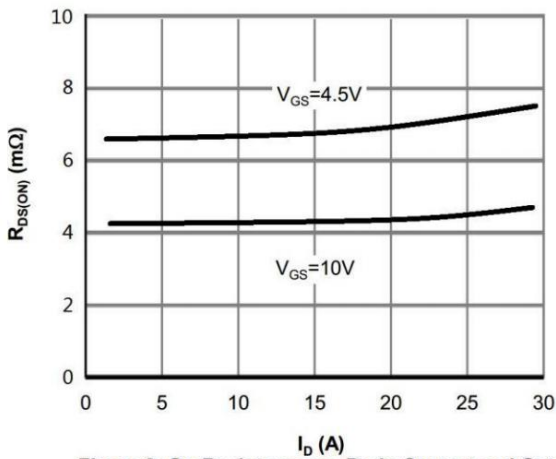


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

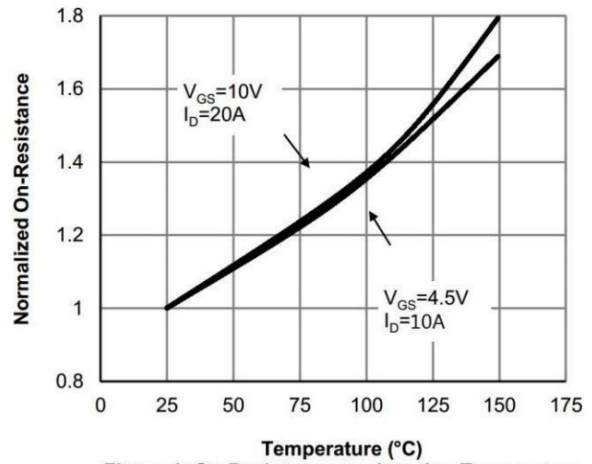


Figure 4: On-Resistance vs. Junction Temperature

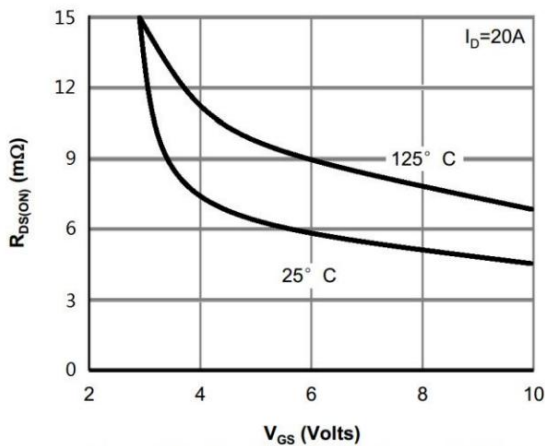


Figure 5: On-Resistance vs. Gate-Source Voltage

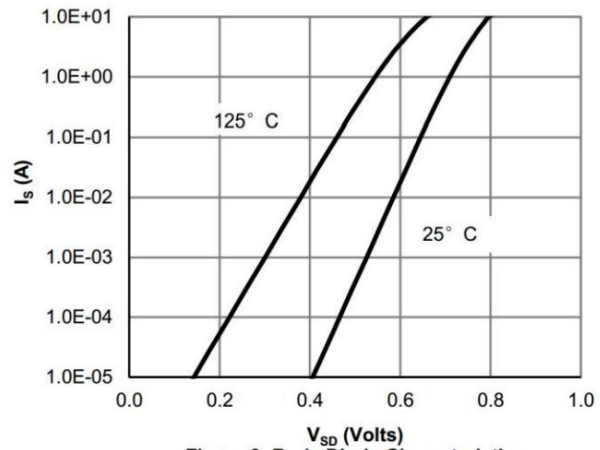


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

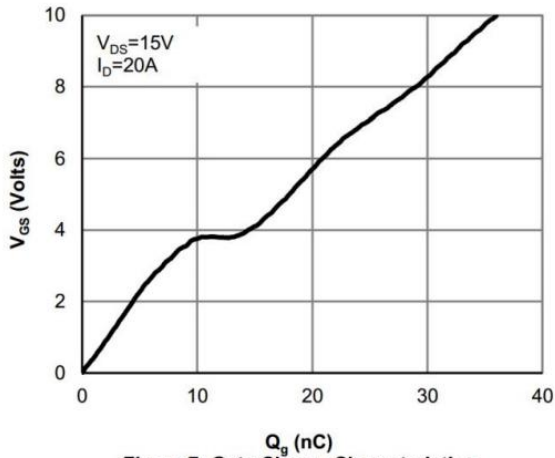


Figure 7: Gate-Charge Characteristics

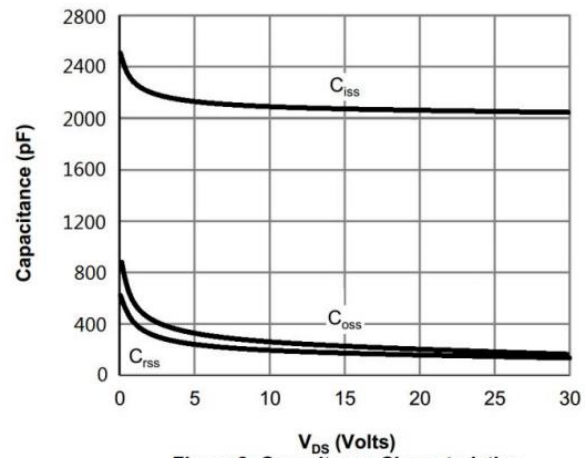


Figure 8: Capacitance Characteristics

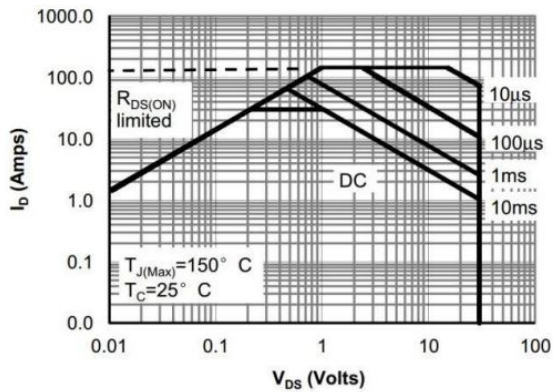


Figure 9: Maximum Forward Biased Safe Operating Area

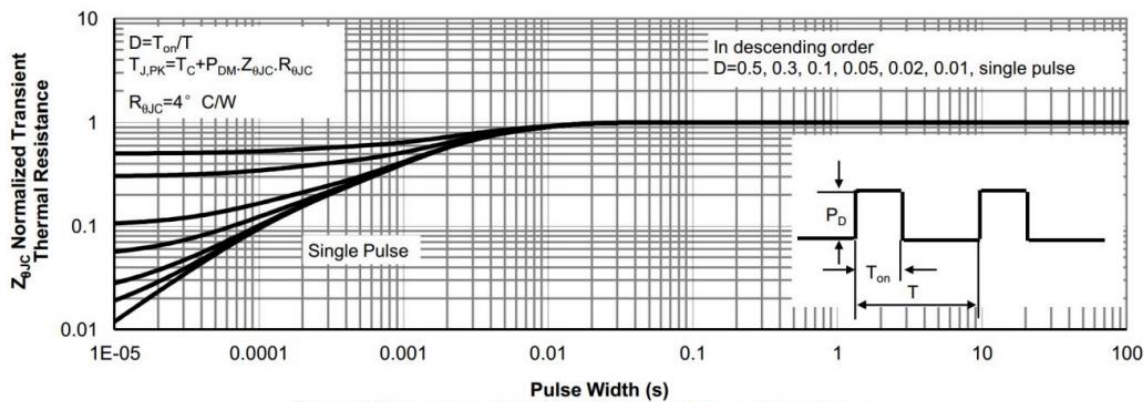
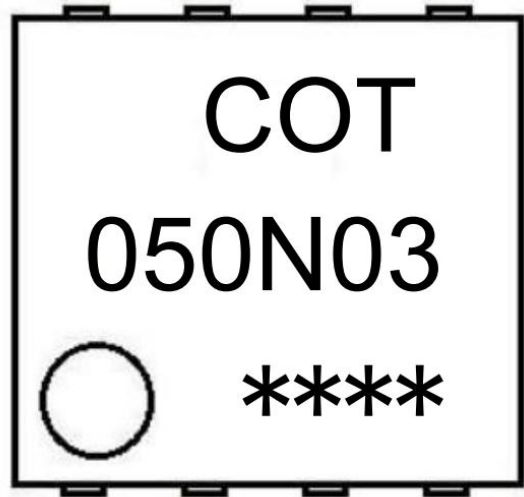


Figure 10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



- Note:
- COT: Company Code.
 - 050N03: 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

