

**Descriptions**

This 30V 24A Double N-channel Mosfet in a PDFN3×3-8L plastic package.

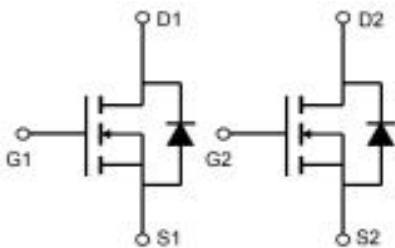
**Features**

- $V_{DS} (V) = 30V$
- $I_D = 24A (V_{GS} = \pm 20V)$
- $R_{DS(ON)}@10V \leq 13mR (Typ. 11mR)$
- Halogen-free product

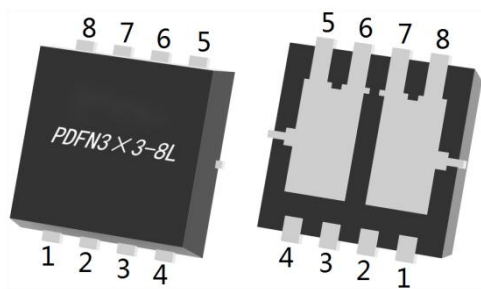
**Applications**

Intended for use in general purpose switching and phase control applications.

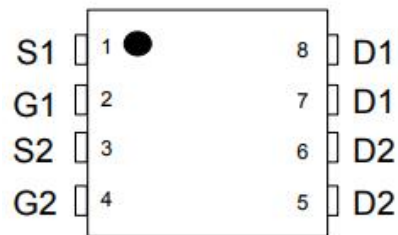
**Equivalent Circuit**



**Pinning**



**Top View**



## Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		$V_{DSS}$	30	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	24	A
Drain Current - Pulsed		$I_{DM}$	55	A
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V
Single Pulsed Avalanche Energy		$E_{AS}$	199	mJ
Avalanche Current		$I_{AS}$	12.9	A
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	15.5	W
Operating and Storage Temperature Range		$T_J, T_{stg}$	-55 to 150	°C
Junction-to-Ambient	$t \leq 10$	$R_{\theta JA}$	40	°C/W
Junction-to-Ambient	Steady-State		75	
Junction-to-Case	Steady-State	$R_{\theta JC}$	9	

## Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V$	$I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30V$	$V_{GS}=0V$			1	$\mu A$
Gate-Body Leakage Current Forward	$I_{GSS}$	$V_{GS}=\pm 20V$	$V_{DS}=0V$			$\pm 0.1$	$\mu A$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$	1.0	1.8	3.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$	$I_D=20A$		11	13	m $\Omega$
		$V_{GS}=4.5V$	$I_D=10A$		16	20	m $\Omega$
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V$	$I_S=1A$			1.2	V
Input Capacitance	$C_{iss}$	$V_{DS}=25V$ $f=1.0MHz$	$V_{GS}=0V$		666		pF
Output Capacitance	$C_{oss}$				26		
Reverse Transfer Capacitance	$C_{rss}$				63		
Gate resistance	$R_g$	$V_{GS}=0V$ $f=1MHz$	$V_{DS}=0V$		1.7		$\Omega$
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $I_D=8A$	$V_{DS}=15V$		13.6		nC
Total Gate Charge	$Q_{g(4.5V)}$				6.8		
Gate Source Charge	$Q_{gs}$				1.6		
Gate Drain Charge	$Q_{gd}$				3.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $R_L=1.87\Omega$	$V_{DS}=15V$ $R_{GEN}=4.5\Omega$		5		ns
Turn-On Rise Time	$t_r$				3.5		
Turn-Off Delay Time	$t_{d(off)}$				22		
Turn-Off Fall Time	$t_f$				4.5		

Electrical Characteristic Curve

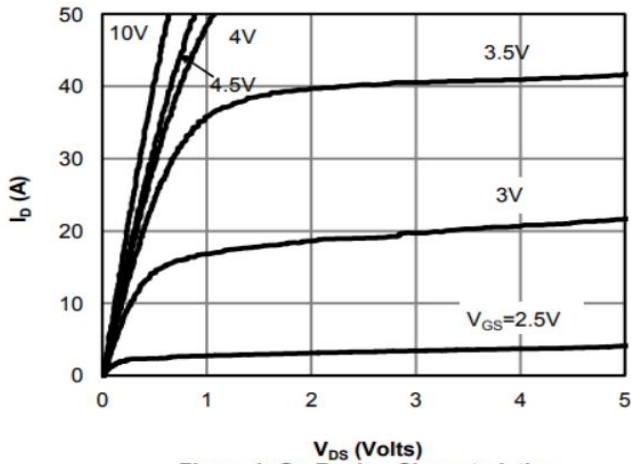


Figure 1: On-Region Characteristics

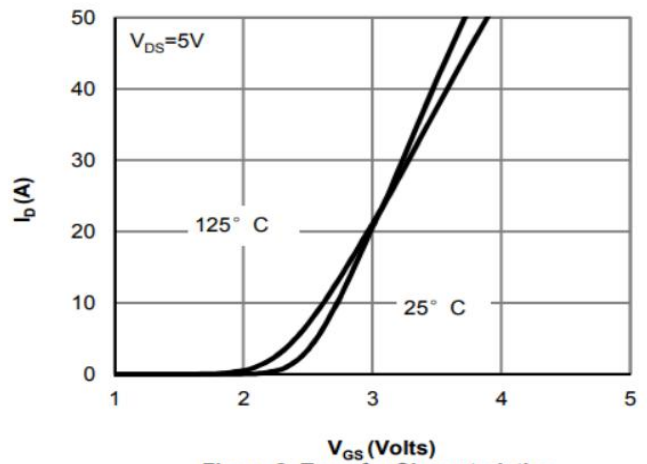


Figure 2: Transfer Characteristics

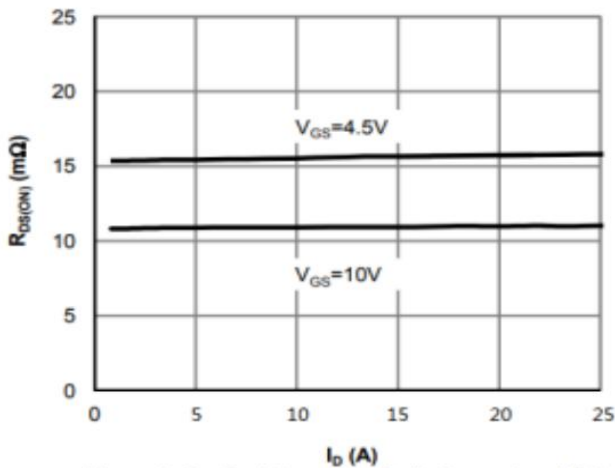


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

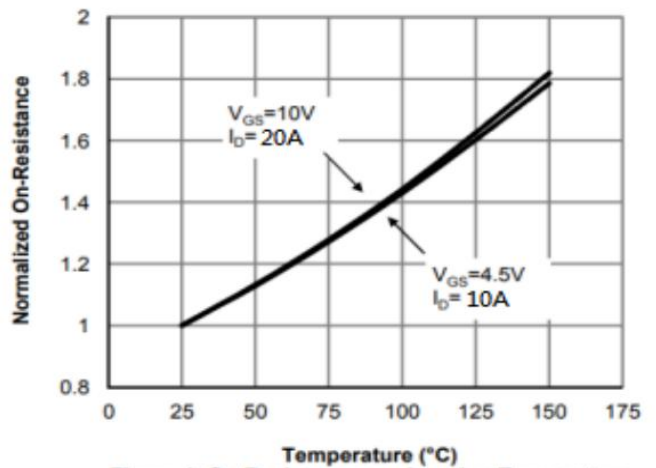


Figure 4: On-Resistance vs. Junction Temperature

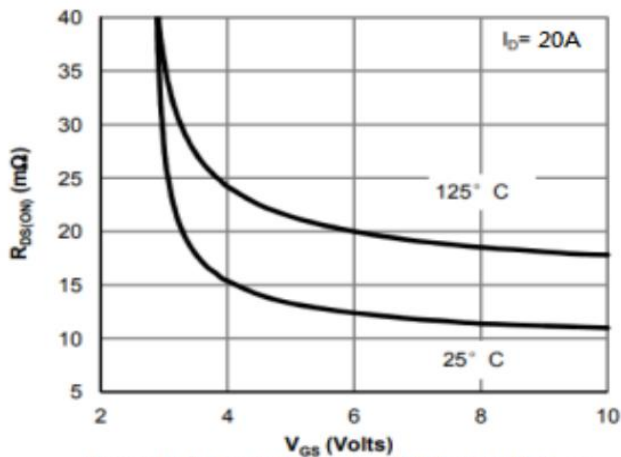


Figure 5: On-Resistance vs. Gate-Source Voltage

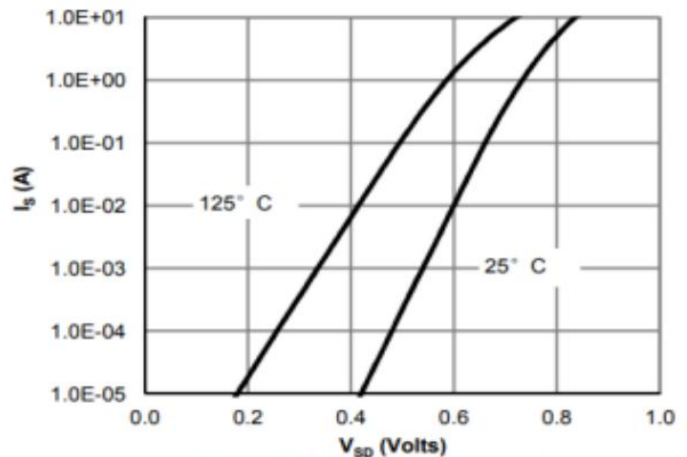


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

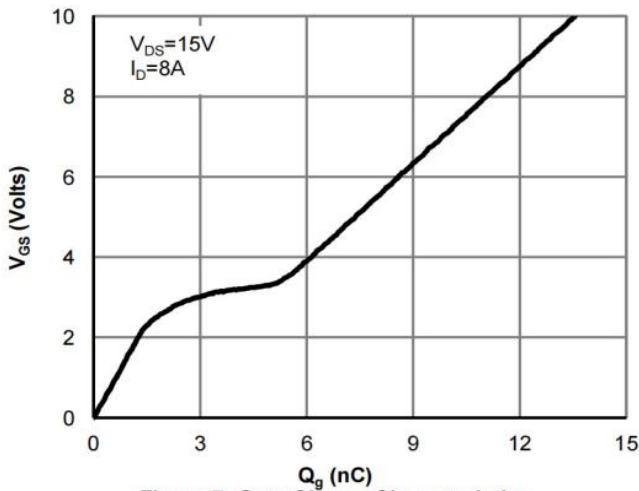


Figure 7: Gate-Charge Characteristics

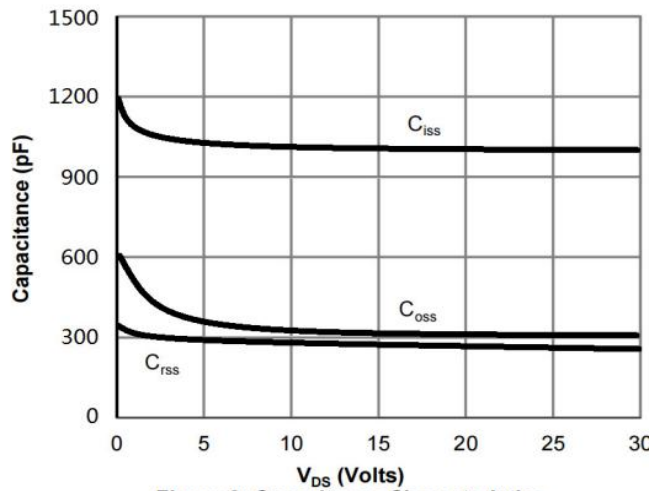


Figure 8: Capacitance Characteristics

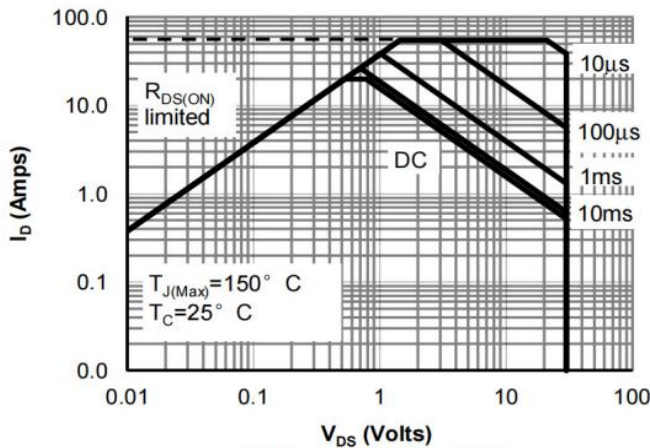


Figure 9: Maximum Forward Biased Safe Operating Area

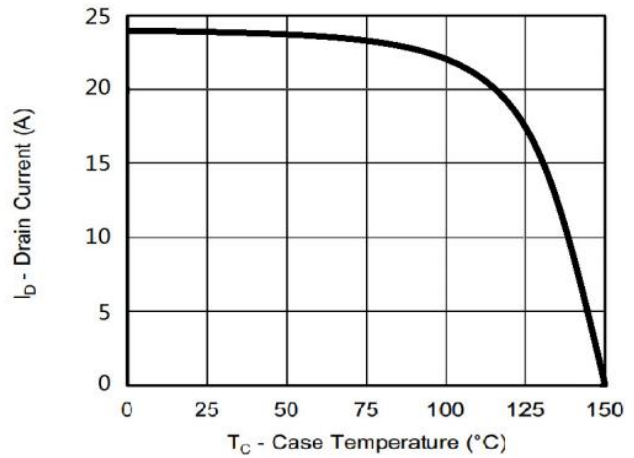


Figure 10: Maximum Continuous Drain Current vs Case Temperature

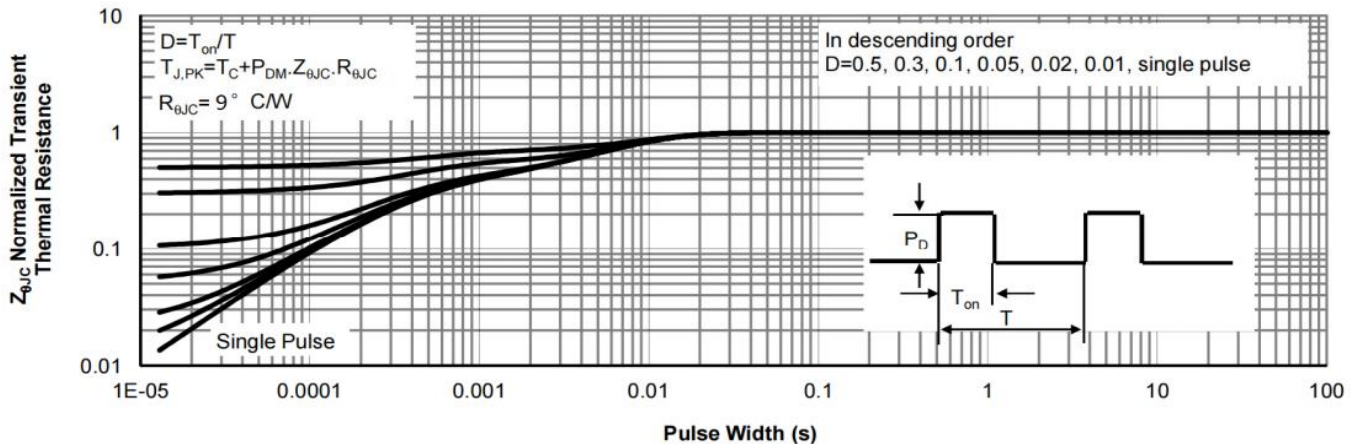
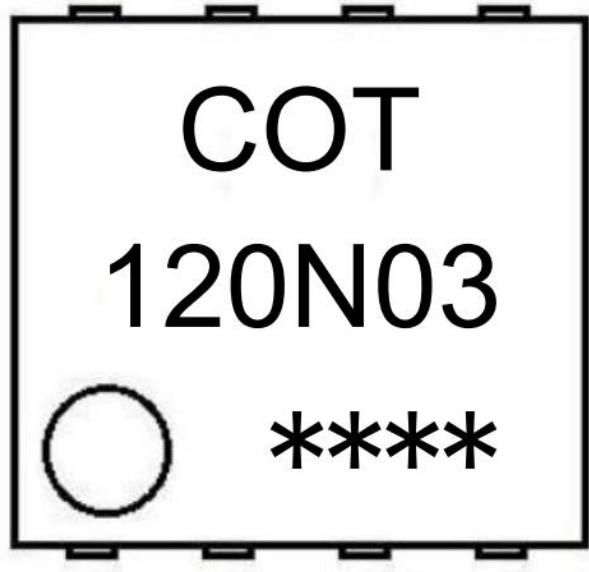


Figure 11: Normalized Maximum Transient Thermal Impedance

**Marking Instructions**



Note:  
 COT: Company Code.  
 120N03 : Product Type Code.  
 \*\*\*\*: Lot No. Code, code change with Lot No.

**Packaging SPEC**

REEL INFORMATION

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

Package Outline Dimensions

PDFN3X3-8L

Unit:mm

