

TN2001PDC

P-Channel Enhancement Mode Power MOSFET

DFN1x0.6-3L

Product Summary

- $V_{DS} = -20V, I_D = -2A$
- $R_{DS(on)} < 170m\Omega @ V_{GS} = -4.5V$
- $R_{DS(on)} < 190m\Omega @ V_{GS} = -2.5V$

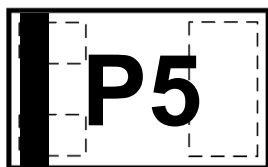
Features

- Advanced Trench Technology
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 1

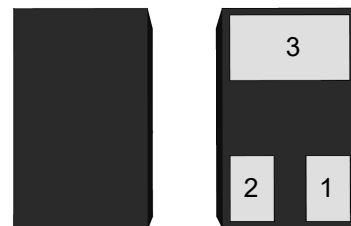
Application

- Load Switch
- PWM Applications
- Power Management

Marking Code



Top View

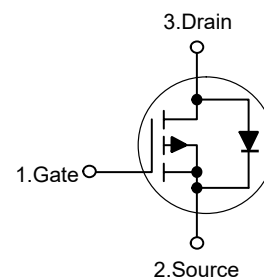


(Top View)

(Bottom View)

Pin	Description
1	Gate
2	Source
3	Drain

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	$-I_D$	2	A
Drain Current-Pulsed ^{Note1}	$-I_{DM}$	6	A
Maximum Power Dissipation	P_D	0.3	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	416	°C/W
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Electrical Characteristics

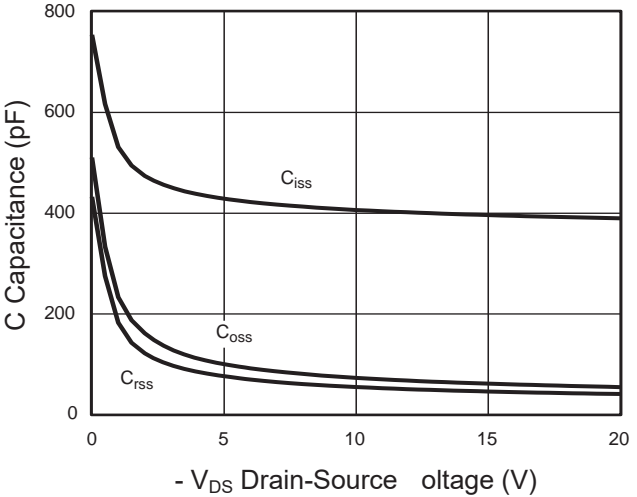
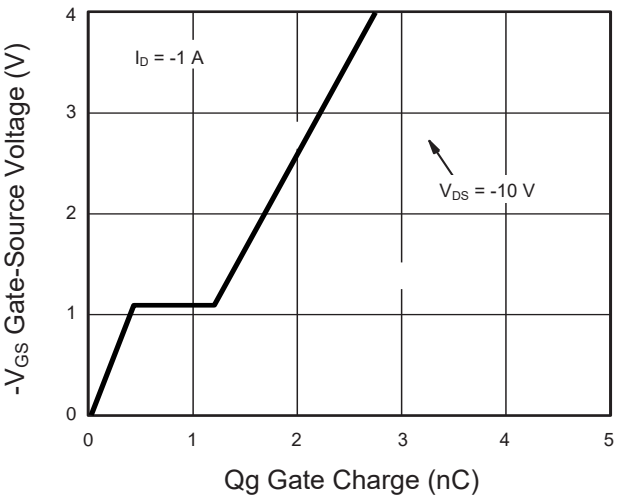
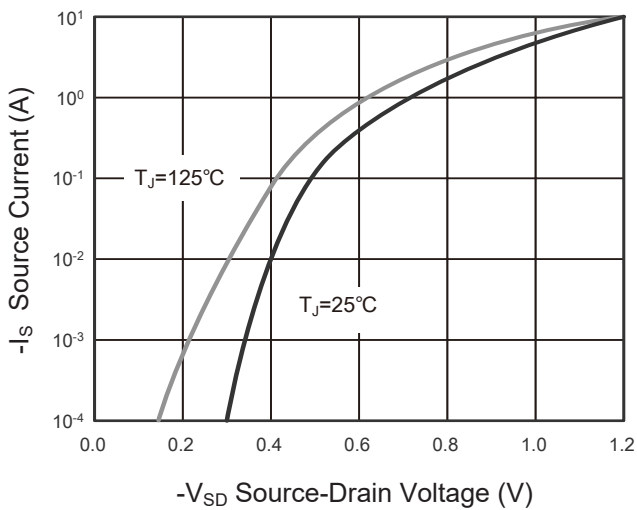
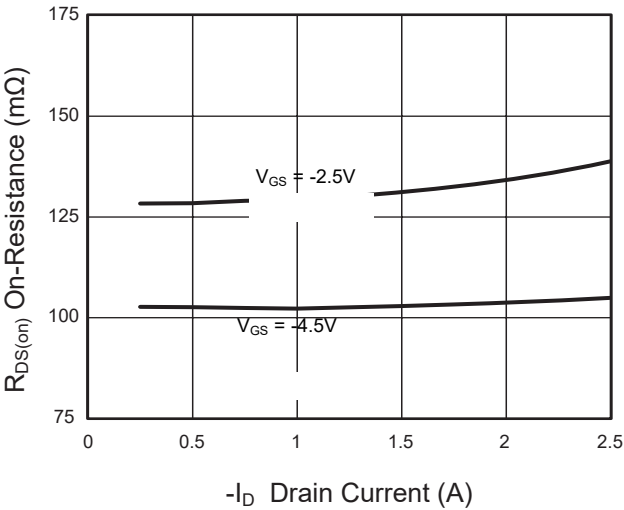
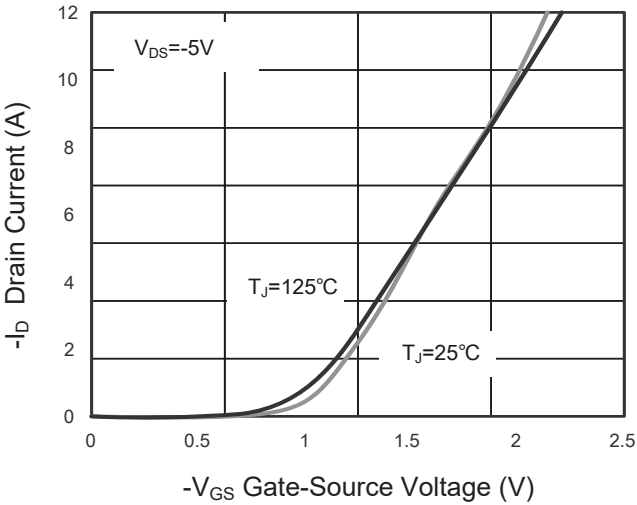
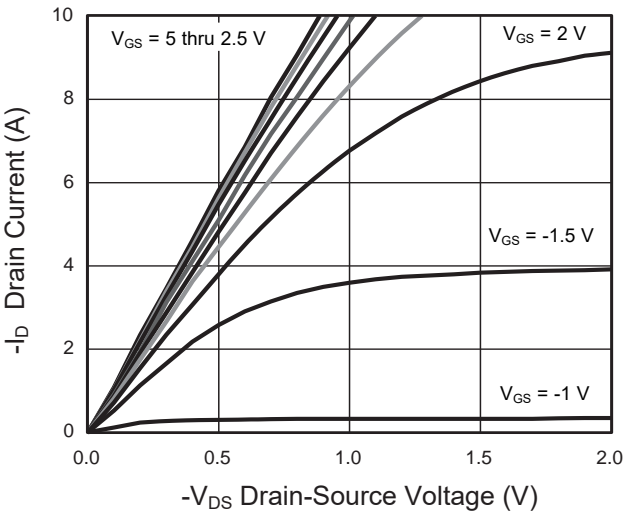
(Ta=25°C unless otherwise specified)

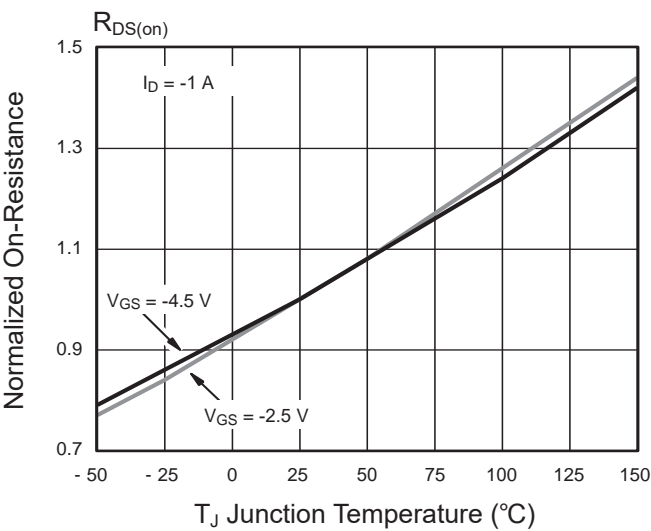
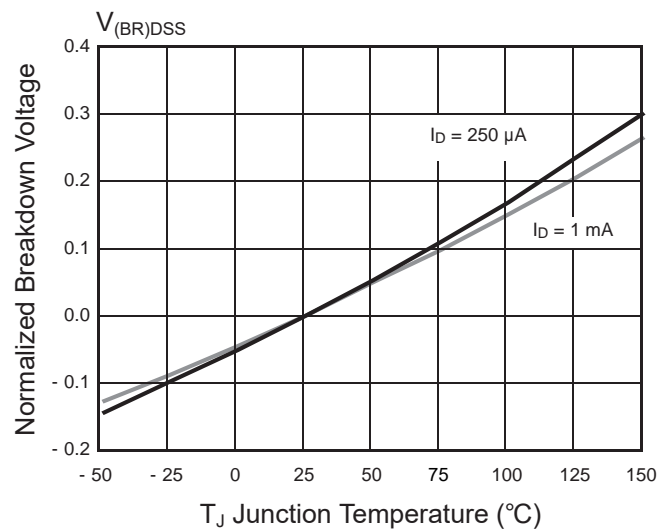
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	-V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	20	--	--	V
Zero Gate Voltage Drain Current	-I _{DSS}	V _{DS} =-20V, V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	--	--	±100	nA
Gate Threshold Voltage ^{Note3}	-V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	0.4	--	1	V
Drain-Source On-Resistance ^{Note3}	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1A	--	--	170	mΩ
		V _{GS} =-2.5V, I _D =-1A	--	--	190	mΩ
Forward Transconductance ^{Note3}	g _{FS}	V _{DS} =-5V, I _D =-1A	4	--	--	S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHz	--	405	--	pF
Output Capacitance	C _{oss}		--	75	--	pF
Reverse Transfer Capacitance	C _{rss}		--	55	--	pF
Total Gate Charge	Q _g	V _{DS} =-10V, I _D =-1A, V _{GS} =-4.5V	--	2.9	--	nC
Gate-Source Charge	Q _{gs}		--	0.45	--	nC
Gate-Drain Charge	Q _{gd}		--	0.75	--	nC
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-10V, I _D =-1A, R _L =10Ω V _{GS} =-4.5V, R _{GEN} =1Ω	--	11	--	nS
Turn-on Rise Time	t _r		--	35	--	nS
Turn-off Delay Time	t _{d(off)}		--	30	--	nS
Turn-off Fall Time	t _f		--	10	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	-V _{SD}	V _{GS} =0V, I _S =-1A	--	--	1.2	V
Diode Forward Current ^{Note2}	-I _S		--	--	2	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

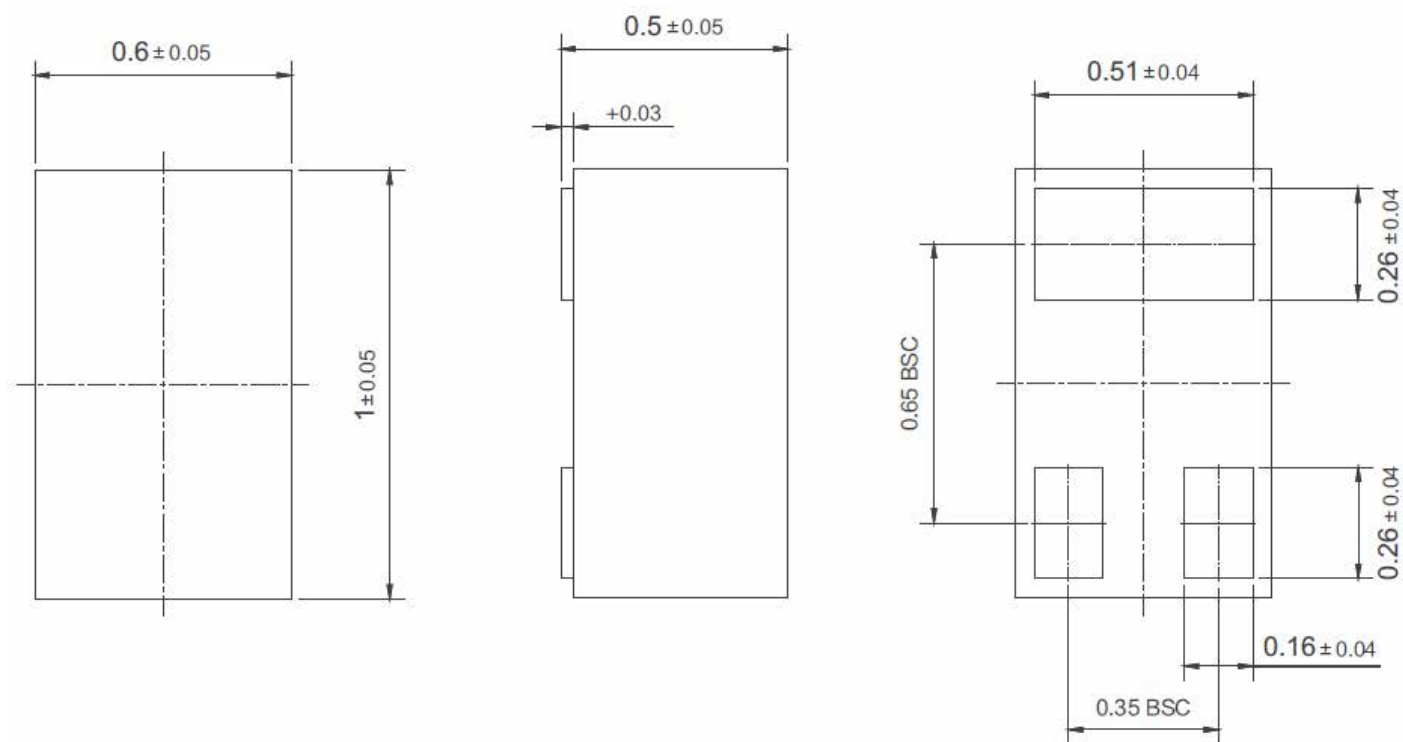
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.3. Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Typical Characteristic Curves





DFN1x0.6-3L-0009 Dimensions in mm




Ordering Information

Device	Package	Shipping
TN2001PDC	DFN1x0.6-3L	10,000PCS/Reel&7inches

Contact Information

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For additional information, please contact your local Sales Representative.

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