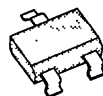


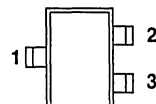
PRODUCT SUMMARY

$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
60	5	0.18	SOT-23

SOT-23



TOP VIEW



1 DRAIN
2 SOURCE
3 GATE

Performance Curves: VNDS06 (See Section 7)

PRODUCT MARKING

VN0605T

V02

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	VN0605T	UNITS
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 30	
Continuous Drain Current	$T_A = 25^\circ\text{C}$	I_D	0.18	A
	$T_A = 100^\circ\text{C}$		0.11	
Pulsed Drain Current ¹		I_{DM}	0.72	
Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	0.36	W
	$T_A = 100^\circ\text{C}$		0.14	
Operating Junction Temperature		T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature		T_{stg}	-55 to 150	
Lead Temperature (1/16" from case for 10 seconds)		T_L	300	

THERMAL RESISTANCE

THERMAL RESISTANCE	SYMBOL	VN0605T	UNITS
Junction-to-Ambient	R_{thJA}	350	$^\circ\text{C/W}$

¹Pulse width limited by maximum junction temperature

ELECTRICAL CHARACTERISTICS ¹				LIMITS		
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ²	VN0605T		UNIT
				MIN	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 10 μA	70	60		V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 1 mA	2.3	0.8	3.0	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V V _{GS} = ±20 V T _J = 125°C	± 1 ± 5		±100 ±500	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 50 V V _{GS} = 0 V T _J = 125°C	0.02 1		1 500	μA
On-State Drain Current ³	I _{D(ON)}	V _{DS} = 10 V, V _{GS} = 10 V	700	500		mA
Drain-Source On-Resistance ³	r _{DS(ON)}	V _{GS} = 4.5 V, I _D = 50 mA	4.5		7.5	Ω
		V _{GS} = 10 V	3		5	
		I _D = 0.5 A T _J = 125°C	5.5		10	
Forward Transconductance ³	g _{FS}	V _{DS} = 10 V, I _D = 0.2 A	180	80		mS
Common Source Output Conductance ³	g _{OS}	V _{DS} = 10 V, I _D = 50 mA	500			μS
DYNAMIC						
Input Capacitance	C _{iss}	V _{DS} = 25 V V _{GS} = 0 V f = 1 MHz	16		60	pF
Output Capacitance	C _{oss}		11		25	
Reverse Transfer Capacitance	C _{rss}		2		5	
SWITCHING						
Turn-On Time	t _{ON}	V _{DD} = 30 V, R _L = 150 Ω I _D = 0.2 A, V _{GEN} = 10 V R _G = 25 Ω (Switching time is essentially independent of operating temperature)	7		20	ns
Turn-Off Time	t _{OFF}		11		20	

NOTES: 1. $T_A = 25^\circ\text{C}$ unless otherwise noted.
2. For design aid only, not subject to production testing.
3. Pulse test; $PW = 80\text{ }\mu\text{s}$, duty cycle $\leq 1\%$.