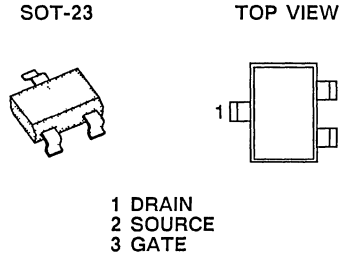
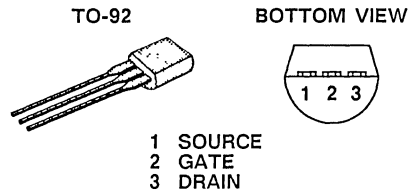


PRODUCT SUMMARY

PART NUMBER	$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
VN45350L	450	350	0.030	TO-92
VN45350T	450	350	0.020	SOT-23

Performance Curves: VNDO50 (See Section 7)

PRODUCT MARKING	
VN45350T	V04



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

PARAMETERS/TEST CONDITIONS	SYMBOL	VN45350L	VN45350T	UNITS
Drain-Source Voltage	V_{DS}	450	450	V
Gate-Source Voltage	V_{GS}	± 30	± 30	
Continuous Drain Current	$T_A = 25^\circ\text{C}$	0.030	0.020	A
	$T_A = 100^\circ\text{C}$	0.019	0.013	
Pulsed Drain Current ¹	I_{DM}	0.12	0.08	
Power Dissipation	$T_A = 25^\circ\text{C}$	0.80	0.35	W
	$T_A = 100^\circ\text{C}$	0.32	0.14	
Operating Junction and Storage Temperature	T_J, T_{stg}	-55 to 150		$^\circ\text{C}$
Lead Temperature (1/16" from case for 10 seconds)	T_L	300		

THERMAL RESISTANCE

THERMAL RESISTANCE	SYMBOL	VN45350L	VN45350T	UNITS
Junction-to-Ambient	R_{thJA}	156	350	$^\circ\text{C}/\text{W}$

¹Pulse width limited by maximum junction temperature

VN45350 SERIES



ELECTRICAL CHARACTERISTICS ¹			LIMITS			
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ²	VN45350		UNIT
				MIN	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 10\ \mu\text{A}$	490	450		V
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 10\ \mu\text{A}$	3.5	1.0	4.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}$ $V_{GS} = \pm 20\text{ V}$ $T_J = 125^\circ\text{C}$	± 1 ± 5		± 100 ± 500	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 250\text{ V}$ $V_{GS} = 0\text{ V}$ $T_J = 125^\circ\text{C}$	0.003 2		0.050 5	μA
On-State Drain Current ³	$I_{D(ON)}$	$V_{DS} = 15\text{ V}, V_{GS} = 10\text{ V}$	30	15		mA
Drain-Source On-Resistance ³	$r_{DS(ON)}$	$V_{GS} = 10\text{ V}, I_D = 10\text{ mA}$	320		350	Ω
		$V_{GS} = 10\text{ V}$ $I_D = 5\text{ mA}$ $T_J = 125^\circ\text{C}$	300 650		820	
Forward Transconductance ³	g_{FS}	$V_{DS} = 15\text{ V}, I_D = 10\text{ mA}$	14	5		mS
Common Source Output Conductance ³	g_{OS}	$V_{DS} = 10\text{ V}, I_D = 1\text{ mA}$	4.5			μS
DYNAMIC						
Input Capacitance	C_{iss}	$V_{DS} = 25\text{ V}$ $V_{GS} = 0\text{ V}$ $f = 1\text{ MHz}$	5		20	pF
Output Capacitance	C_{oss}		1.8		10	
Reverse Transfer Capacitance	C_{rss}		0.5		5	
SWITCHING						
Turn-On Time	$t_{d(ON)}$	$V_{DD} = 25\text{ V}, R_L = 2500\ \Omega$ $I_D = 10\text{ mA}, V_{GEN} = 10\text{ V}$ $R_G = 25\ \Omega$ (Switching time is essentially independent of operating temperature)	4.5		10	ns
	t_r		8		15	
Turn-Off Time	$t_{d(OFF)}$		15		30	
	t_f		60		100	

- NOTES: 1. $T_A = 25^\circ\text{C}$ unless otherwise noted.
 2. For design aid only, not subject to production testing.
 3. Pulse test; $PW = 300\ \mu\text{s}$, duty cycle $\leq 2\%$.