

N-Channel Enhancement-Mode MOS Transistors

Product Summary

Part Number	$V_{(BR)DSS}$ Min (V)	$r_{DS(on)}$ Max (Ω)	$V_{GS(th)}$ (V)	I_D Min (mA)
TN2460L	240	60 @ $V_{GS} = 10$ V	0.5 to 1.8	75
TN2460T		60 @ $V_{GS} = 10$ V	0.5 to 1.8	51

Features

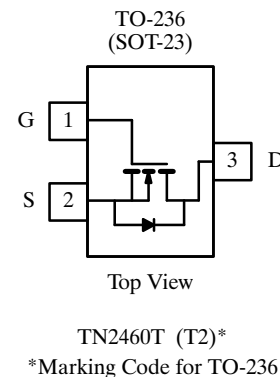
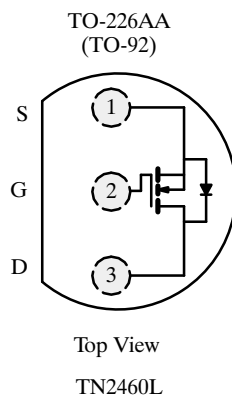
- Low On-Resistance: 40 Ω
- Secondary Breakdown Free: 260 V
- Low Power/Voltage Driven
- Low Input and Output Leakage
- Excellent Thermal Stability

Benefits

- Low Offset Voltage
- Full-Voltage Operation
- Easily Driven Without Buffer
- Low Error Voltage
- No High-Temperature "Run-Away"

Applications

- High-Voltage Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Transistors, etc.
- Telephone Mute Switches, Ringer Circuits
- Power Supply, Converters
- Motor Control



Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	TN2460L	TN2460T	Unit
Drain-Source Voltage	V_{DS}	240	240	V
Gate-Source Voltage	V_{GS}	± 20	± 20	
Continuous Drain Current ($T_J = 150^\circ\text{C}$)	I_D	$T_A = 25^\circ\text{C}$	75	mA
		$T_A = 100^\circ\text{C}$	48	
Pulsed Drain Current	I_{DM}	800	400	
Power Dissipation	P_D	$T_A = 25^\circ\text{C}$	0.8	W
		$T_A = 100^\circ\text{C}$	0.32	
Maximum Junction-to-Ambient	R_{thJA}	156	350	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150		$^\circ\text{C}$

Notes

- a. Pulse width limited by maximum junction temperature.

TN2460L/TN2460T

Specifications^a

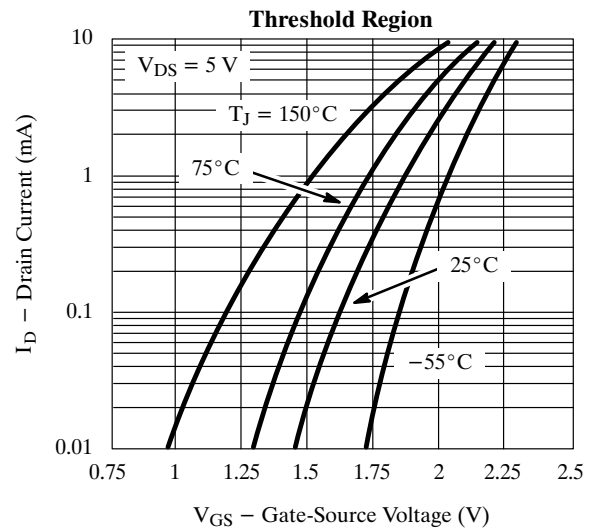
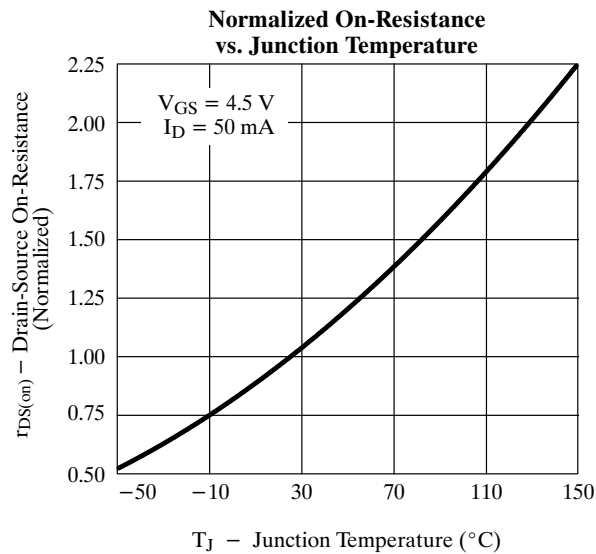
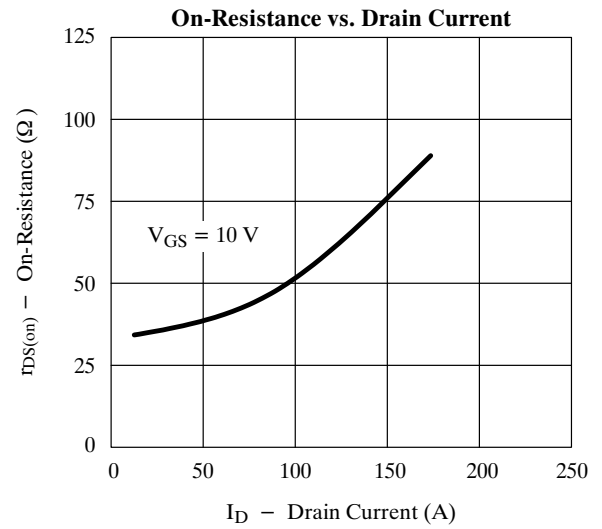
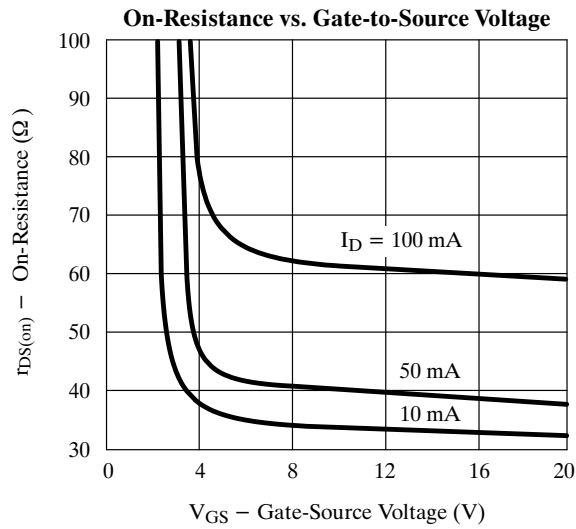
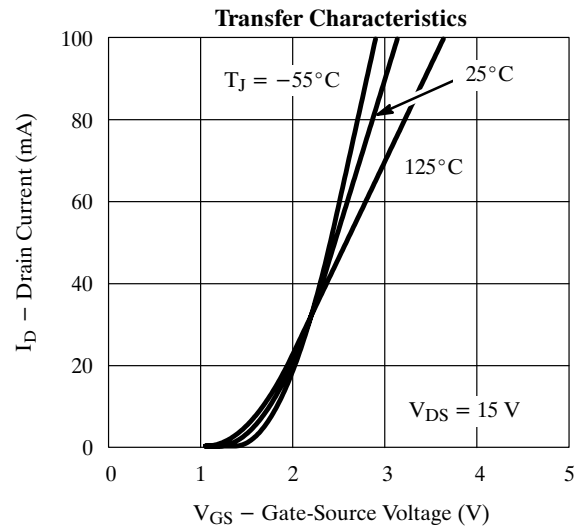
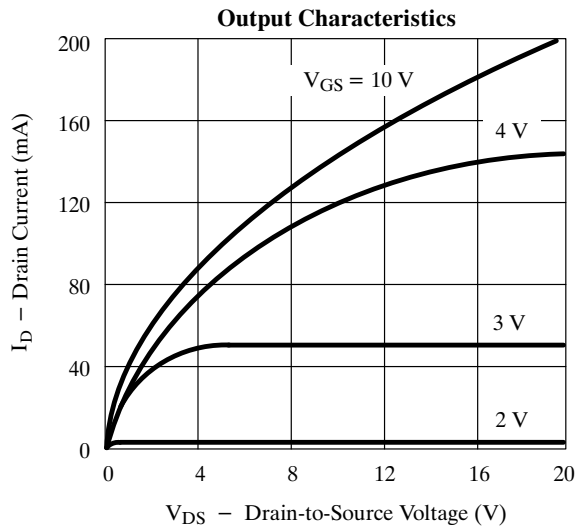
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ ^b	Max	
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 10\text{ }\mu\text{A}$	240	260		V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu\text{A}$	0.5	1.65	1.8	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{ V}$ $T_J = 125^\circ\text{C}$			± 10	nA
				± 5		
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 120\text{ V}, V_{GS} = 0\text{ V}$ $T_J = 125^\circ\text{C}$			0.1	μA
					5	
On-State Drain Current ^c	$I_{D(on)}$	$V_{DS} = 10\text{ V}, V_{GS} = 10\text{ V}$ $V_{DS} = 10\text{ V}, V_{GS} = 4.5\text{ V}$	75	140		mA
			20	130		
Drain-Source On-Resistance ^c	$r_{DS(on)}$	$V_{GS} = 10\text{ V}, I_D = 0.05\text{ A}$ $V_{GS} = 4.5\text{ V}, I_D = 0.02\text{ A}$ $T_J = 125^\circ\text{C}$		38	60	Ω
				40	60	
				75	120	
Forward Transconductance ^c	g_{fs}	$V_{DS} = 10\text{ V}, I_D = 0.05\text{ A}$	30	70		mS
Dynamic						
Input Capacitance	C_{iss}	$V_{DS} = 25\text{ V}, V_{GS} = 0\text{ V}, f = 1\text{ MHz}$		14	30	pF
Output Capacitance	C_{oss}			4	15	
Reverse Transfer Capacitance	C_{rss}			1	10	
Switching^d						
Turn-On Time	t_{ON}	$V_{DD} = 25\text{ V}, R_L = 500\text{ }\Omega$ $I_D \cong 0.05\text{ A}, V_{GEN} = 10\text{ V}$ $R_G = 25\text{ }\Omega$		8	20	ns
Turn-Off Time	t_{OFF}			20	35	

Notes

- $T_A = 25^\circ\text{C}$ unless otherwise noted.
- For DESIGN AID ONLY, not subject to production testing.
- Pulse test: $PW \leq 80\text{ }\mu\text{s}$ duty cycle $\leq 1\%$.
- Switching time is essentially independent of operating temperature.

VNDN24

Typical Characteristics (25°C Unless Otherwise Noted)



TN2460L/TN2460T

Typical Characteristics (25°C Unless Otherwise Noted) (Cont'd)

