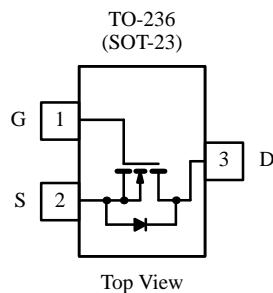


N-Channel Enhancement-Mode MOSFET

Product Summary

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
20	0.4 @ $V_{GS} = 4.5$ V	0.6
	0.5 @ $V_{GS} = 2.5$ V	0.5



TN0200T (N0)*

*Marking Code for TO-236

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^b	I_D	$T_A = 25^\circ\text{C}$	A
		$T_A = 70^\circ\text{C}$	
Pulsed Drain Current ^a	I_{DM}	4	A
Continuous Source Current (Diode Conduction) ^b	I_S	0.5	
Power Dissipation ^b	P_D	$T_A = 25^\circ\text{C}$	W
		$T_A = 70^\circ\text{C}$	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

Thermal Resistance Ratings

Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient ^b	R_{thJA}	550	$^\circ\text{C}/\text{W}$

Notes

- Pulse width limited by maximum junction temperature.
- Surface Mounted on FR4 Board, $t \leq 10$ sec.

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70202. A SPICE Model data sheet is available for this product (FaxBack document #70560).

Specifications^a

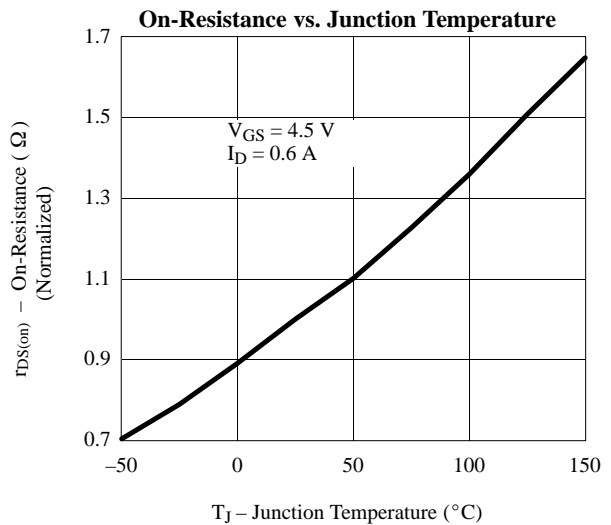
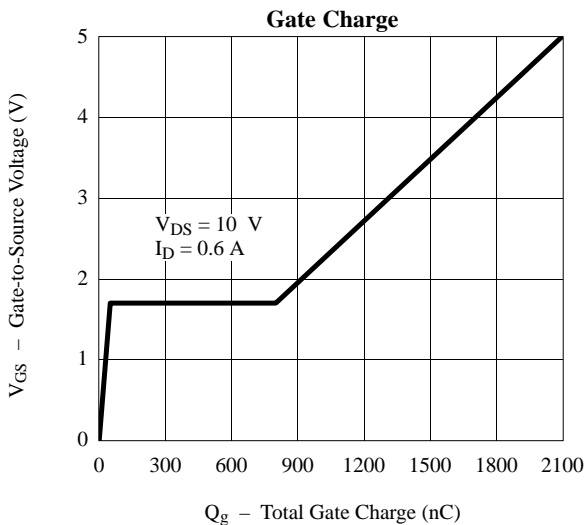
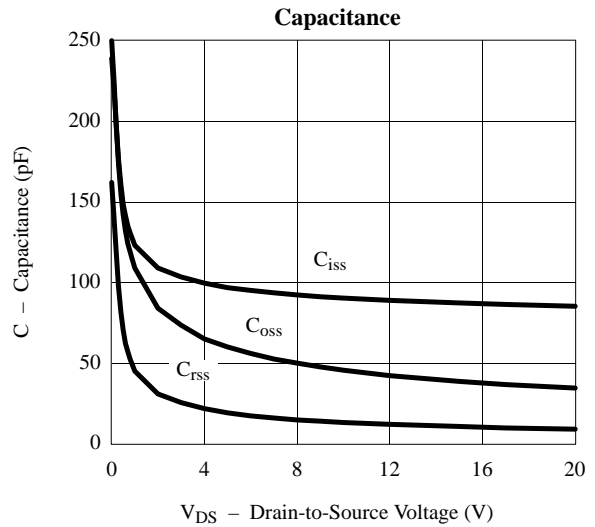
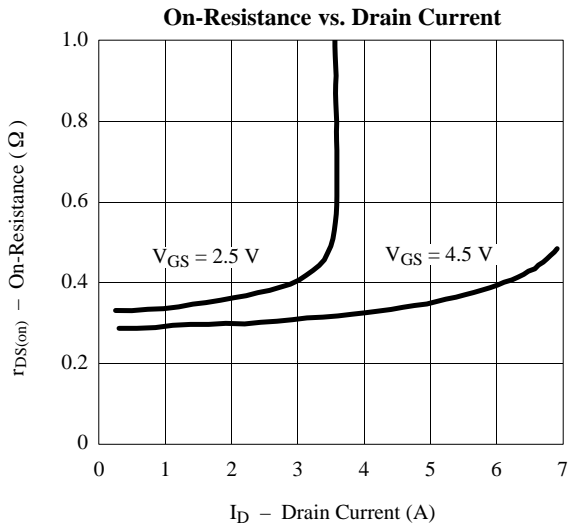
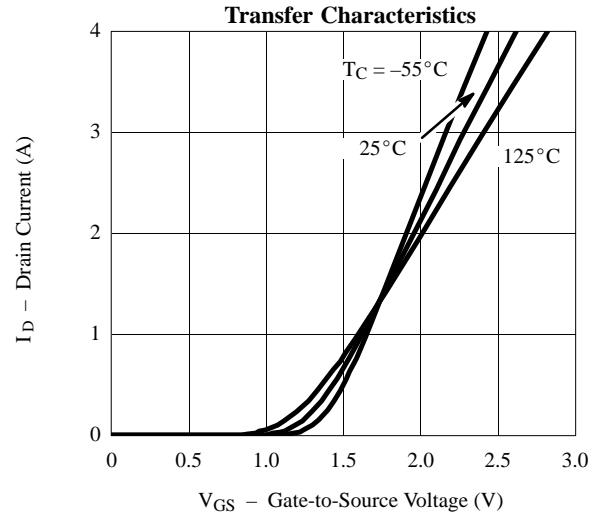
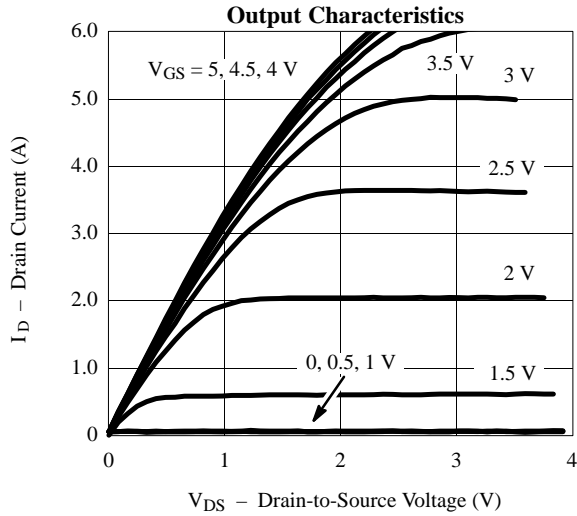
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 10\ \mu\text{A}$	20	36		V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 50\ \mu\text{A}$	0.65			
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 8\text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16\text{ V}, V_{GS} = 0\text{ V}$ $T_J = 55^\circ\text{C}$			1	μA
					10	
On-State Drain Current ^b	$I_{D(on)}$	$V_{DS} \geq 5\text{ V}, V_{GS} = 4.5\text{ V}$	2.5			A
		$V_{DS} \geq 5\text{ V}, V_{GS} = 2.5\text{ V}$	1.5			
Drain-Source On-Resistance ^b	$r_{DS(on)}$	$V_{GS} = 4.5\text{ V}, I_D = 0.6\text{ A}$		0.29	0.4	Ω
		$V_{GS} = 2.5\text{ V}, I_D = 0.6\text{ A}$		0.34	0.5	
Forward Transconductance ^b	g_{fs}	$V_{DS} = 5\text{ V}, I_D = 0.6\text{ A}$		2.2		S
Diode Forward Voltage	V_{SD}	$I_S = 0.5\text{ A}, V_{GS} = 0\text{ V}$		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS} = 10\text{ V}, V_{GS} = 4.5\text{ V}, I_D = 0.6\text{ A}$		1900	2800	pC
Gate-Source Charge	Q_{gs}			50		
Gate-Drain Charge	Q_{gd}			750		
Input Capacitance	C_{iss}	$V_{DS} = 10\text{ V}, V_{GS} = 0\text{ V}, f = 1\text{ MHz}$		90		pF
Output Capacitance	C_{oss}			45		
Reverse Transfer Capacitance	C_{rss}			12		
Switching						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10\text{ V}, R_L = 16\ \Omega$ $I_D \cong 0.6\text{ A}, V_{GEN} = 4.5\text{ V}, R_G = 6\ \Omega$		8	13	ns
Rise Time	t_r			14	21	
Turn-Off Delay Time	$t_{d(off)}$			21	30	
Fall-Time	t_f			7	11	

Notes

- a. $T_A = 25^\circ\text{C}$ unless otherwise noted.
 b. Pulse test: $PW \leq 300\ \mu\text{s}$ duty cycle $\leq 2\%$.

VNLJ02

Typical Characteristics (25°C Unless Otherwise Noted)



Typical Characteristics (25°C Unless Otherwise Noted)

