

TD2001Y

Dual P-Channel Enhancement-Mode MOSFETs

SO-8 PACKAGE

T.39-27

PRODUCT SUMMARY

$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)
-30	2	-0.5

FEATURES

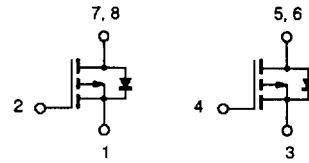
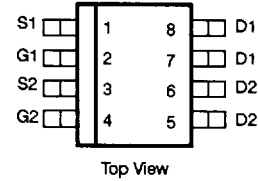
- Electrically Isolated MOSFETs
- Surface Mount
- Low Thermal Resistance

APPLICATIONS

- MOSFET Drivers
- Motor Drivers

END PRODUCTS

- Disk/Tape Drives
- Printers/Plotters
- Instrumentation



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
			SINGLE MOSFET	
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_A = 25^{\circ}\text{C}$	I_D	-0.65	A
	$T_A = 100^{\circ}\text{C}$		-0.41	
Pulsed Drain Current ¹		I_{DM}	2	
Maximum Power Dissipation	$T_A = 25^{\circ}\text{C}$	P_D	1.5	
	$T_A = 100^{\circ}\text{C}$		0.8	
Operating Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^{\circ}\text{C}$
Lead Temperature (1/16" from case for 10 sec.)		T_L	300	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	LIMITS	UNITS
Junction-to-Ambient	R_{thJA}	83.3	K/W

¹Pulse width limited by maximum junction temperature.

TD2001Y



SPECIFICATIONS ^a			LIMITS			
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ^b	MIN	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)SS}$	$V_{GS} = 0\text{ V}, I_D = -10\text{ }\mu\text{A}$	-55	-30	V	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -1\text{ mA}$	-3.6	-0.8	-4.5	
Gate-Body Leakage	I_{GBS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{ V}$			± 100 nA	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24\text{ V}, V_{GS} = 0\text{ V}$ $T_J = 125^\circ\text{C}$			-10 -500	μA
On-State Drain Current ^c	$I_{D(ON)}$	$V_{DS} = -10\text{ V}, V_{GS} = -10\text{ V}$	-1.5	-1	A	
Drain-Source On-Resistance ^c	$r_{DS(ON)}$	$V_{GS} = -10\text{ V}, I_D = -200\text{ mA}$ $T_J = 125^\circ\text{C}$	1.7	2	Ω	
Forward Transconductance ^c	g_{FS}	$V_{DS} = -10\text{ V}, I_D = -0.5\text{ A}$	290	200	mS	
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = -15\text{ V}, f = 1\text{ MHz}$	130		150	
Output Capacitance	C_{oss}		75		100	
Reverse Transfer Capacitance	C_{rss}		20		60	
SWITCHING						
Turn-On Time	t_{ON}	$V_{DD} = -25\text{ V}, R_L = 23\text{ }\Omega, I_D = -1\text{ A}$ $V_{GEN} = -10\text{ V}, R_G = 25\text{ }\Omega$ (Switching time is essentially independent of operating temperature)	16		30	
Turn-Off Time	t_{OFF}		13		30	

- NOTES:
- a. $T_A = 25^\circ\text{C}$ unless otherwise noted.
 - b. For design aid only, not subject to production testing.
 - c. Pulse test: Pulse Width $\leq 300\text{ }\mu\text{sec}$; Duty Cycle $\leq 2\%$.