

# TD2001Y

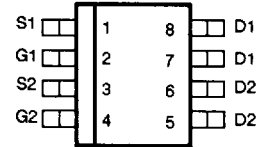
## Dual P-Channel Enhancement-Mode MOSFETs

SO-8 PACKAGE

T:39-27

### PRODUCT SUMMARY

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



Top View

### FEATURES

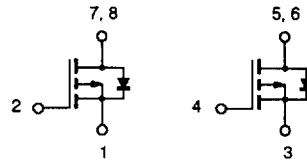
- Electrically Isolated MOSFETs
- Surface Mount
- Low Thermal Resistance

### 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	$V_{GS}$	$\pm 20$		
Continuous Drain Current	$I_D$	$T_A = 25^\circ\text{C}$	-0.65	A
		$T_A = 100^\circ\text{C}$	-0.41	
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	2		
Maximum Power Dissipation	$P_D$	$T_A = 25^\circ\text{C}$	1.5	W
		$T_A = 100^\circ\text{C}$	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

<sup>1</sup>Pulse width limited by maximum junction temperature.

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SPECIFICATIONS*		LIMITS				
PARAMETER	SYMBOL	TEST CONDITIONS	TYP <sup>b</sup>	MIN	MAX	UNIT
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)SS}$	$V_{GS} = 0\text{ V}, I_D = -10\ \mu\text{A}$	-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	$I_{GSS}$	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 20\ \text{V}$			$\pm 100$	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	$\mu\text{A}$
On-State Drain Current <sup>c</sup>	$I_{D(ON)}$	$V_{DS} = -10\ \text{V}, V_{GS} = -10\ \text{V}$	-1.5	-1		A
Drain-Source On-Resistance <sup>c</sup>	$r_{DS(ON)}$	$V_{GS} = -10\ \text{V}, I_D = -200\ \text{mA}$ $T_J = 125^\circ\text{C}$	1.7		2	$\Omega$
Forward Transconductance <sup>c</sup>	$g_{FS}$	$V_{DS} = -10\ \text{V}, I_D = -0.5\ \text{A}$	290	200		mS
<b>DYNAMIC</b>						
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	pF
Reverse Transfer Capacitance	$C_{riss}$		20		60	
<b>SWITCHING</b>						
Turn-On Time	$t_{ON}$	$V_{DD} = -25\ \text{V}, R_L = 23\ \Omega, I_D = -1\ \text{A}$ $V_{GEN} = -10\ \text{V}, R_G = 25\ \Omega$ (Switching time is essentially independent of operating temperature)	16		30	ns
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  $\leq 300\ \mu\text{sec}$ ; Duty Cycle  $\leq 2\%$ .