Siliconix incorporated

TD2001Y
Dual P-Channel
Enhancement-Mode MOSFETs

T·39-27

SO-8 PACKAGE

Top View

PRODUCT SUMMARY

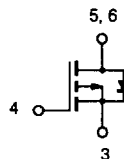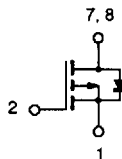| $V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)
−30	2	−0.5
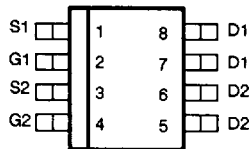
FEATURES

- 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°C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS SINGLE MOSFET	UNITS
Drain-Source Voltage		V_{DS}	−30	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	T_A = 25°C	I_D	−0.65	A
	T_A = 100°C		−0.41	
Pulsed Drain Current[1]		I_{DM}	2	
Maximum Power Dissipation	T_A = 25°C	P_D	1.5	W
	T_A = 100°C		0.8	
Operating Junction & Storage Temperature Range		T_J, T_{stg}	−55 to 150	°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

[1]Pulse width limited by maximum junction temperature.

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SPECIFICATIONS[a]				LIMITS			
PARAMETER	**SYMBOL**	**TEST CONDITIONS**	**TYP[b]**	**MIN**	**MAX**	**UNIT**
STATIC							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0$ V, $I_D = -10$ μA	-55	-30		V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -1$ mA	-3.6	-0.8	-4.5	
Gate-Body Lekage	I_{GSS}	$V_{DS} = 0$ V, $V_{GS} = \pm 20$ V			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24$ V, $V_{GS} = 0$ V			-10	μA
		$T_J = 125°C$			-500	
On-State Drain Current[c]	$I_{D(ON)}$	$V_{DS} = -10$ V, $V_{GS} = -10$ V	-1.5	-1		A
Drain-Source On-Resitance[c]	$r_{DS(ON)}$	$V_{GS} = -10$ V, $I_D = -200$ mA	1.7		2	Ω
		$T_J = 125°C$	3		4	
Forward Transconductance[c]	g_{FS}	$V_{DS} = -10$ V, $I_D = -0.5$ A	290	200		mS
DYNAMIC							
Input Capacitance	C_{iss}	$V_{GS} = 0$ V, $V_{DS} = -15$ V, f = 1 MHz	130		150	pF
Output Capacitance	C_{oss}		75		100	
Reverse Transfer Capacitance	C_{rss}		20		60	
SWITCHING							
Turn-On Time	t_{ON}	$V_{DD} = -25$ V, $R_L = 23$ Ω, $I_D = -1$ A $V_{GEN} = -10$ V, $R_G = 25$ Ω	16		30	ns
Turn-Off Time	t_{OFF}	(Switching time is essentially independent of operating temperature)	13		30	

NOTES:
a. $T_A = 25°C$ unless otherwise noted.
b. For design aid only, not subject to production testing.
c. Pulse test: Pulse Width ≤ 300 μsec, Duty Cycle $\leq 2\%$.