Siliconix incorporated

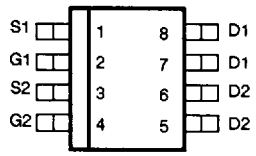
TD2001Y
Dual P-Channel Enhancement-Mode MOSFETs

T-39-27

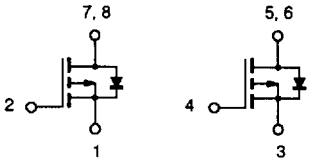
PRODUCT SUMMARY

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

SO-8 PACKAGE



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°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} = ±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 ≤ 2%.