

Product Summary

- $V_{DS} = -40V, I_D = -5A$
- $R_{DS(on)} < 85m\Omega @ V_{GS} = -10V$
- $R_{DS(on)} < 100m\Omega @ V_{GS} = -4.5V$

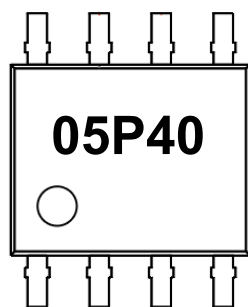
Features

- Advanced Trench Technology
- 100% Avalanche Tested
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

Application

- Load Switch
- PWM Applications
- Power Management

Marking Code



Absolute Maximum Ratings

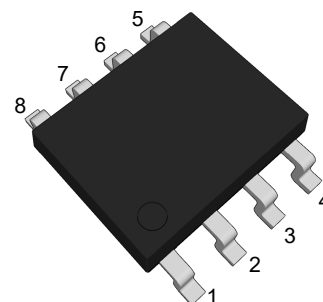
Ratings at 25°C ambient temperature unless otherwise specified.

Parameter		Symbol	Value	Unit
Drain-Source Voltage		$-V_{DS}$	40	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current-Continuous	$T_A = 25^\circ C$	$-I_D$	5	A
Drain Current-Pulsed ^{Note1}		$-I_{DM}$	20	A
Maximum Power Dissipation	$T_A = 25^\circ C$	P_D	3.7	W
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{STG}	-55 to +150	$^\circ C$

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	33.8	$^\circ C/W$
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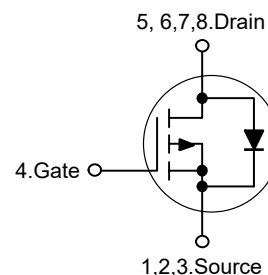
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(Top View)

Pin	Description
1,2,3	Source
4	Gate
5,6,7,8	Drain

Schematic Diagram



Electrical Characteristics

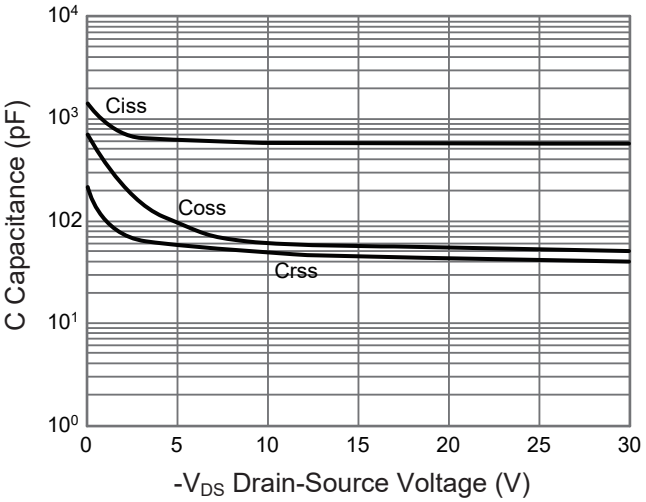
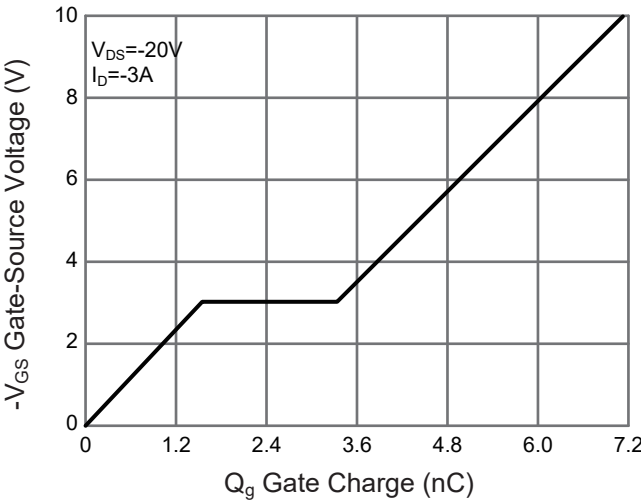
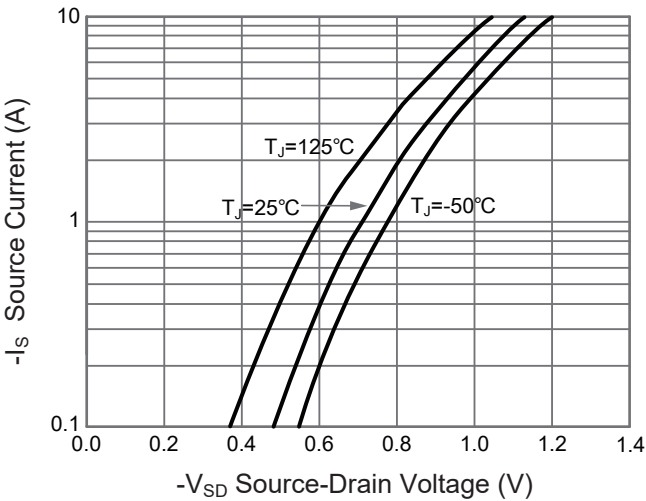
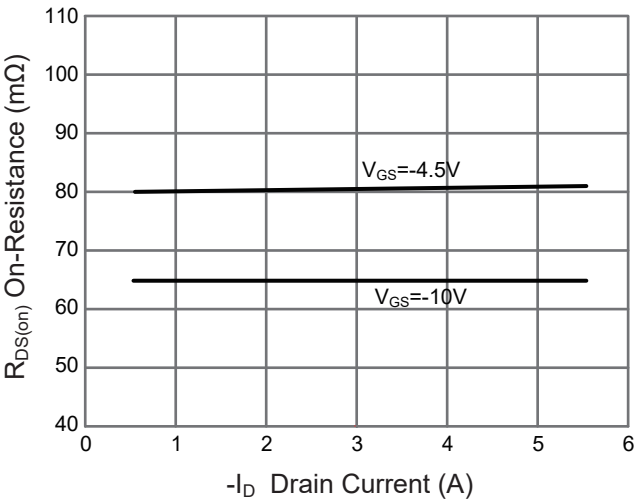
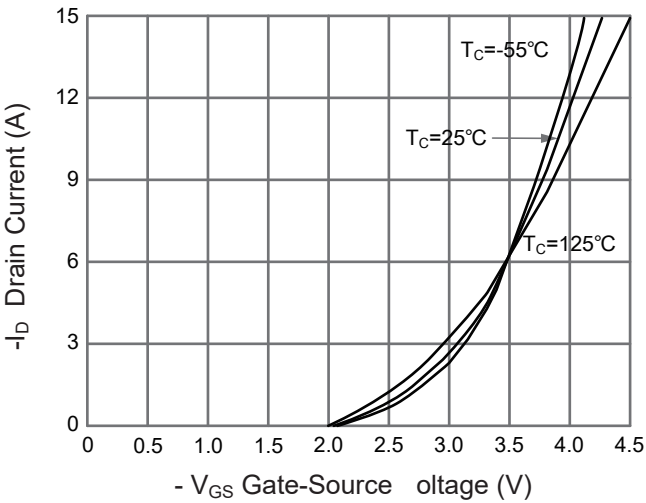
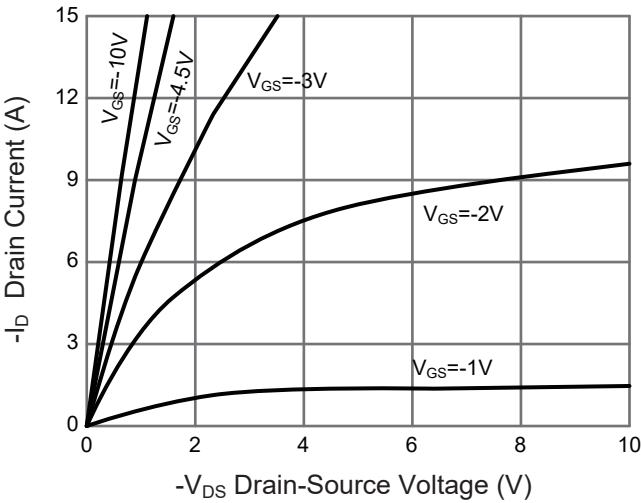
(T_J=25°C unless otherwise specified)

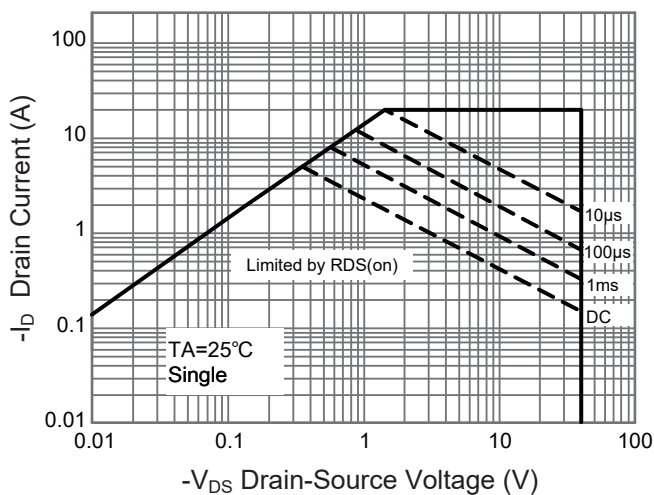
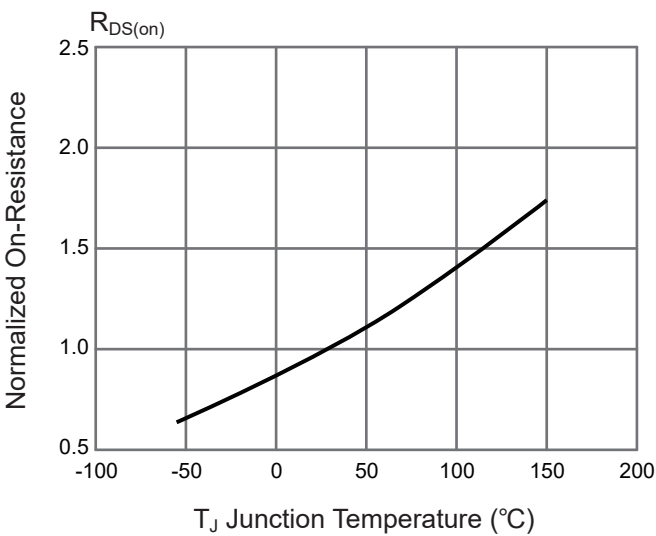
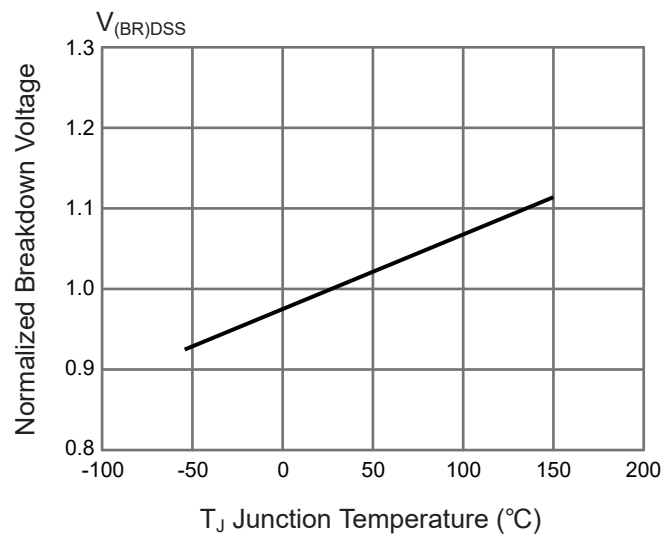
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$-V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	40	--	--	V
Zero Gate Voltage Drain Current	$-I_{DSS}$	$V_{DS}=-40V, V_{GS}=0V$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	± 100	nA
Gate Threshold Voltage ^{Note2}	$-V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	1.0	--	2.5	V
Drain-Source On-Resistance ^{Note2}	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-3A$	--	--	85	m Ω
		$V_{GS}=-4.5V, I_D=-2A$	--	--	100	m Ω
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-20V, V_{GS}=0V, f=1MHz$	--	573	--	pF
Output Capacitance	C_{oss}		--	53	--	pF
Reverse Transfer Capacitance	C_{rss}		--	42	--	pF
Total Gate Charge	Q_g	$V_{DS}=-20V, I_D=-3A, V_{GS}=10V$	--	7.1	--	nC
Gate-Source Charge	Q_{gs}		--	1.5	--	nC
Gate-Drain Charge	Q_{gd}		--	1.8	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-20V, I_D=-5A, V_{GS}=-10V, R_{GEN}=2.5\Omega$	--	6.5	--	nS
Turn-on Rise Time	t_r		--	14	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	34	--	nS
Turn-off Fall Time	t_f		--	18	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note2}	$-V_{SD}$	$V_{GS}=0V, I_S=-5A$	--	--	1.2	V
Diode Forward Current	$-I_S$		--	--	5	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Typical Characteristic Curves

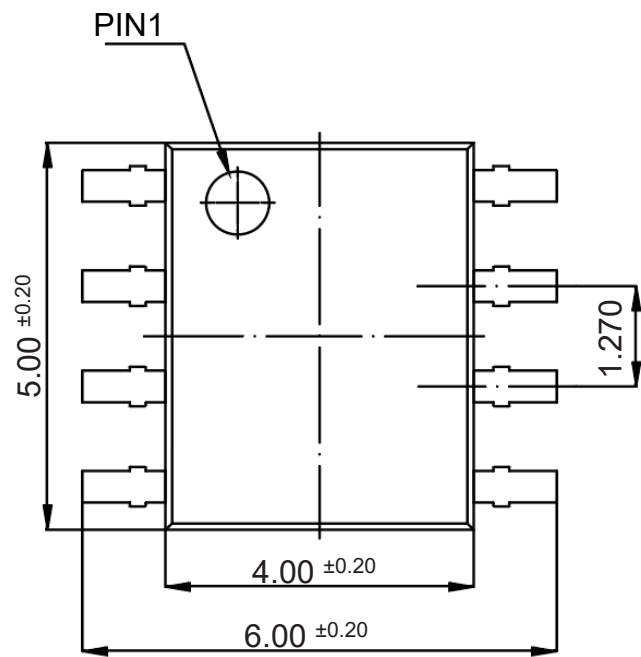




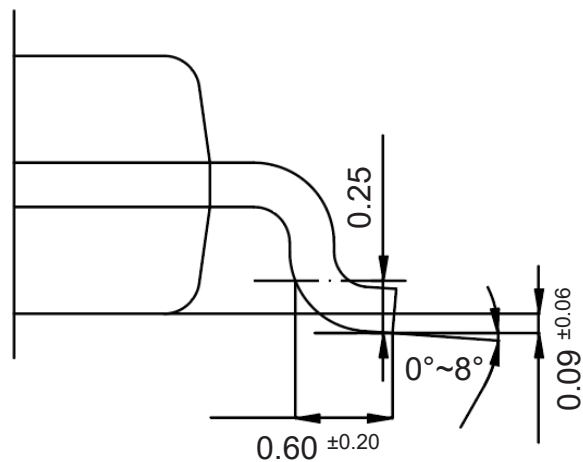
Package Outline

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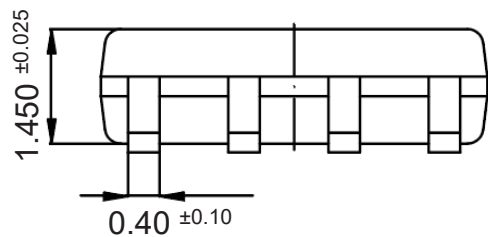
Dimensions in mm



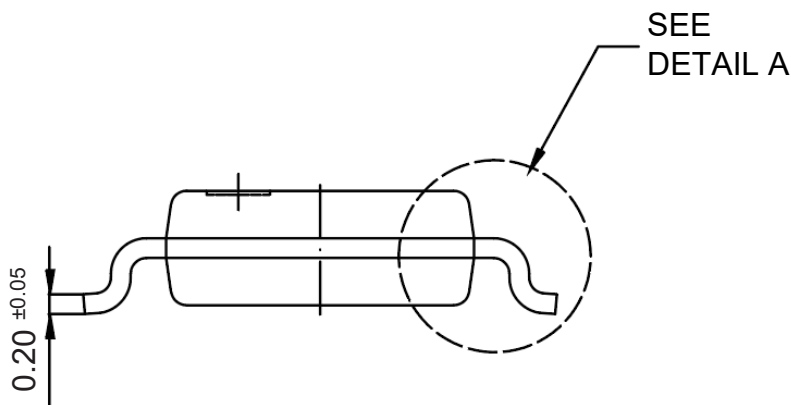
TOP VIEW



DETAIL A



SIDE VIEW



FRONT VIEW

Ordering Information

Device	Package	Shipping
TN05P40PA	SOP-8	4,000PCS/Reel&13inches

Contact Information

TANI website: <http://www.tanisemi.com> Email: tani@tanisemi.com

For additional information, please contact your local Sales Representative.



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