



New Product

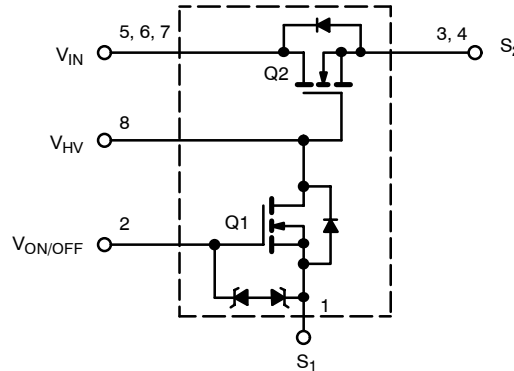
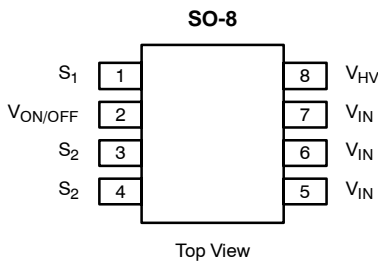
Si4701BDY  
Vishay Siliconix

## Load Switch with Level-Shift

PRODUCT SUMMARY		
$V_{DS2}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
30	0.015 @ $V_{GS2} = 10$ V	7.0
	0.021 @ $V_{GS2} = 4.5$ V	6.0



Product Is Completely Pb-free



Ordering Information: Si4701BDY—E3  
Si4701BDY-T1—E3 (with Tape and Reel)

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Input Voltage	$V_{IN}$	30	V
Q2 Gate-Drive Voltage Referenced to S1 or S2	$V_{HV}$	20	
ON/OFF Voltage	$V_{ON/OFF}$	8	
Load Current	$I_L$	Continuous <sup>a</sup>	7.0
		Pulsed <sup>b</sup>	$\pm 30$
Continuous Intrinsic Diode Conduction <sup>a</sup>	$I_S$	-1.15	A
Maximum Power Dissipation <sup>a</sup>	$P_D$	1.25	W
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	$^\circ\text{C}$
ESD Rating, MIL-STD-883D Human Body Model (100 pF, 1500 $\Omega$ )	ESD	3	kV

THERMAL RESISTANCE RATINGS				
Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient (t = steady state) <sup>a</sup>	$R_{thJA}$	80	100	$^\circ\text{C/W}$
Maximum Junction-to-Foot (Q2)	$R_{thJC}$	25	30	

SPECIFICATIONS ( $T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>OFF Characteristics</b>						
Reverse Leakage Current	$I_{FL}$	$V_{IN} = 30$ V, $V_{ON/OFF} = 0$ V, $V_{HV} = 0$ V			1	$\mu\text{A}$
Diode Forward Voltage	$V_{SD}$	$I_S = -1.15$ A		0.7	1	V
<b>ON Characteristics</b>						
On-Resistance (Q2)	$r_{DS(on)}$	$V_{ON/OFF} = 0$ V, $I_D = 7$ A, $V_{HV} = 10$ V, $V_{S2} = 0$ V		0.012	0.015	$\Omega$
		$V_{ON/OFF} = 0$ V, $I_D = 6$ A, $V_{HV} = 4.5$ V, $V_{S2} = 0$ V		0.017	0.021	
On-State (Q2) Drain-Current	$I_{D(on)}$	$V_{IN-OUT} \leq 0.1$ V, $V_{IN} = 5$ V, $V_{ON/OFF} = 0$ V, $V_{HV} = 10$ V	20			A

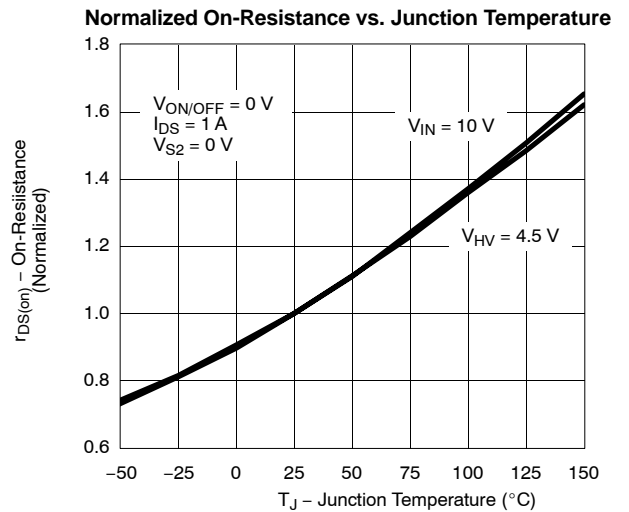
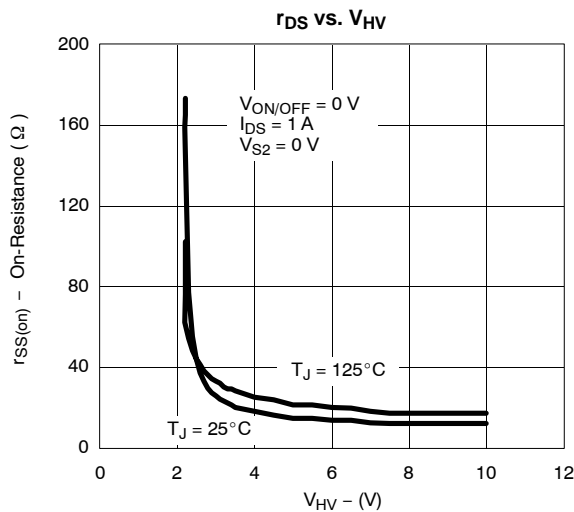
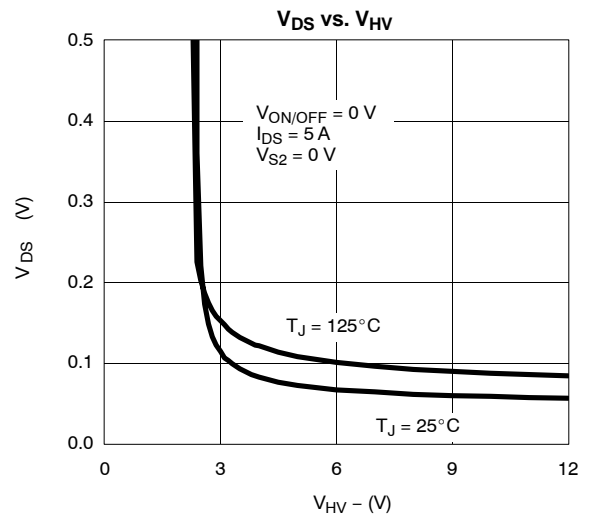
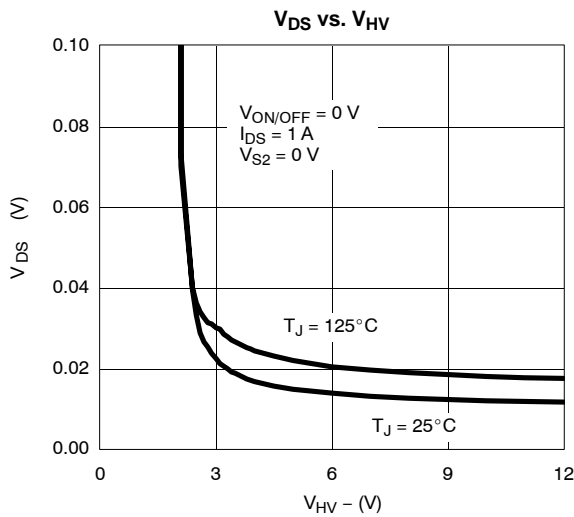
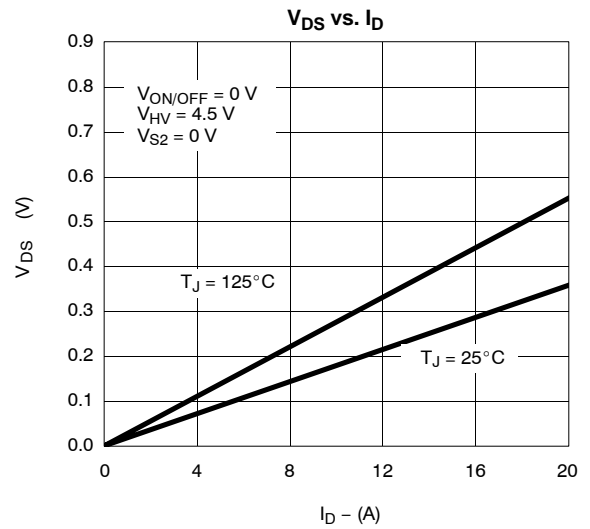
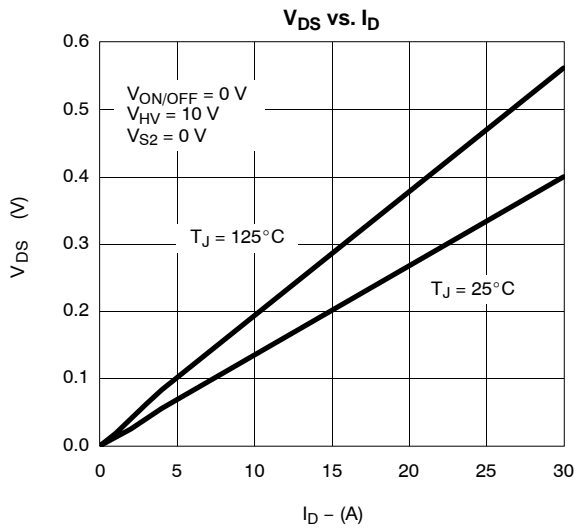
Notes

- a. Surface Mounted on FR4 Board.
- b. Pulse test: pulse width  $\leq 300$   $\mu\text{s}$ , duty cycle  $\leq 2\%$ .

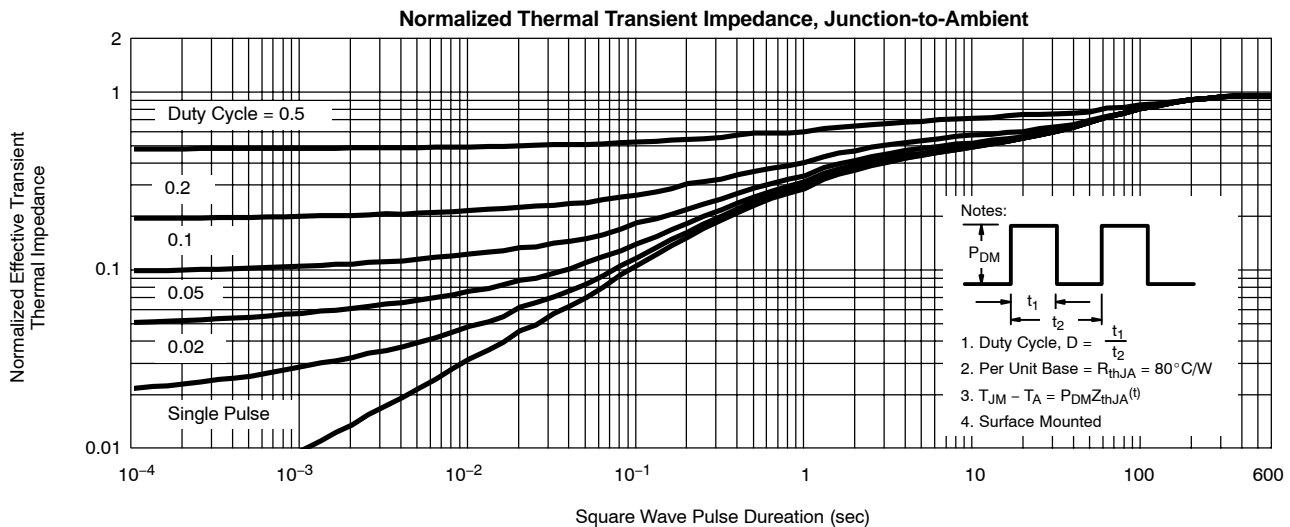
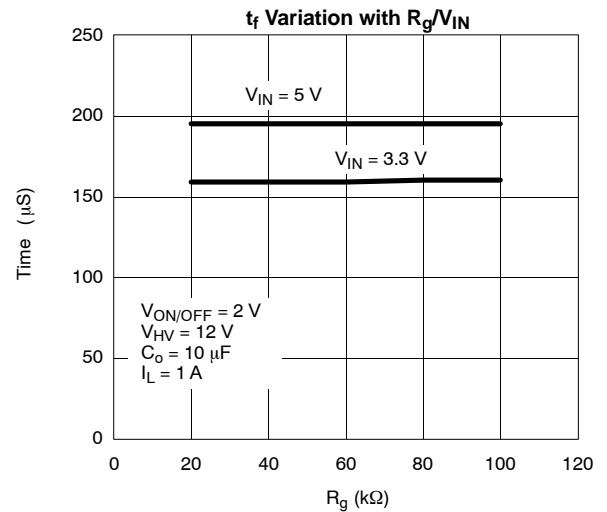
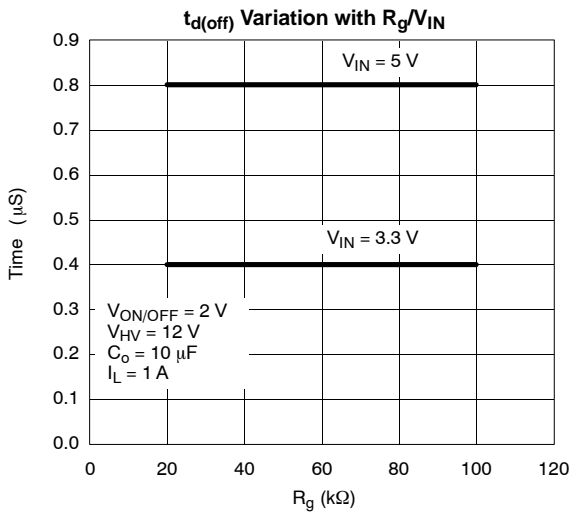
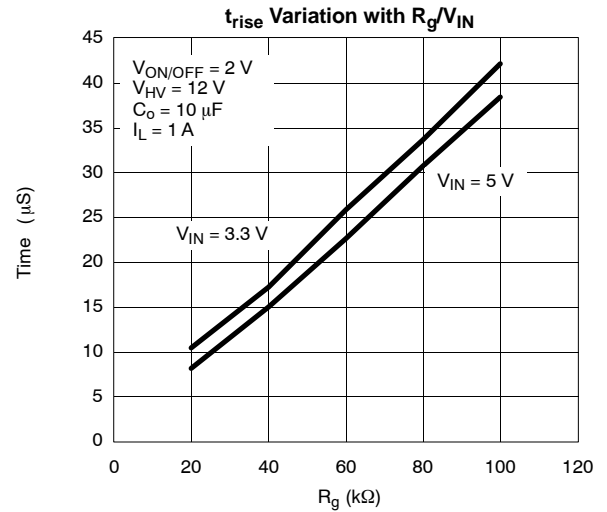
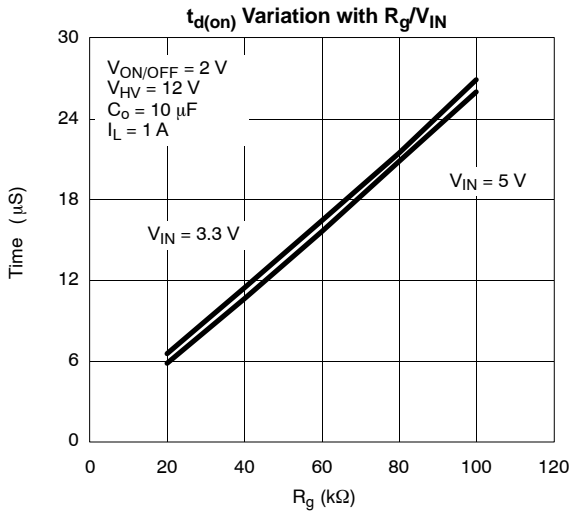
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.



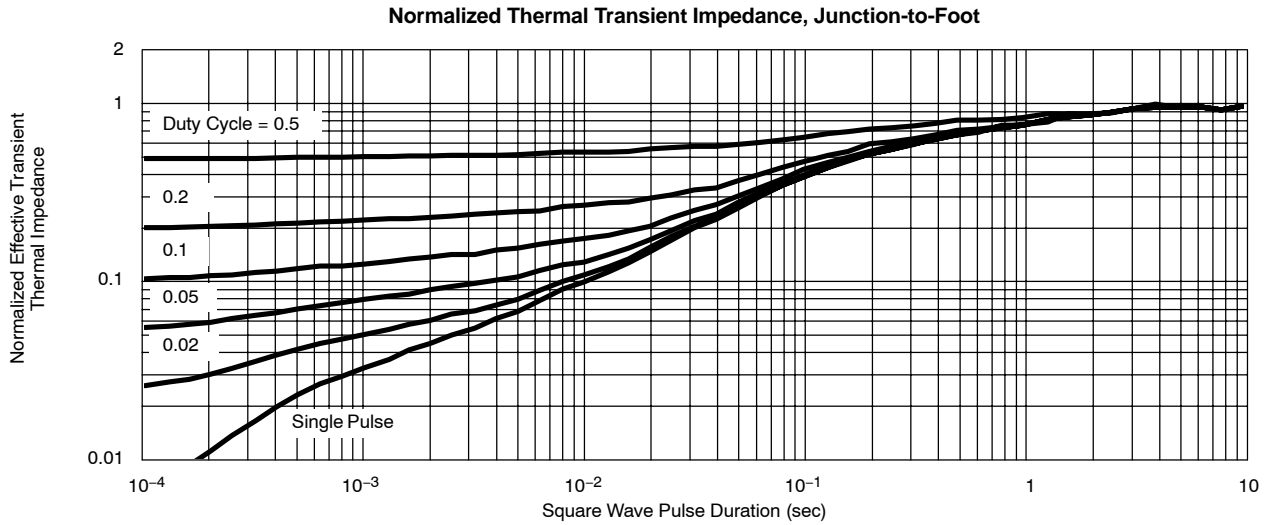
**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**



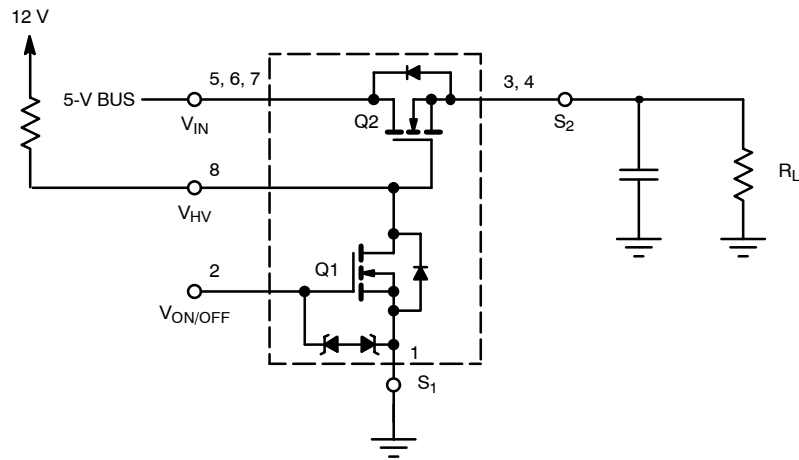
**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**



**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**



**TYPICAL APPLICATION CIRCUIT**



NOTE: Voltage difference between pull-up voltage, 12 V, and BUS voltage, 5 V, should be greater than 4.5 V.

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