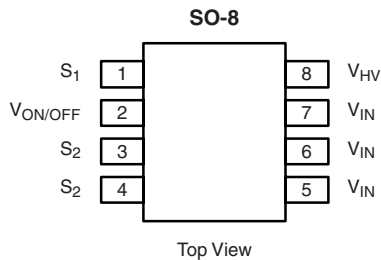


Load Switch with Level-Shift

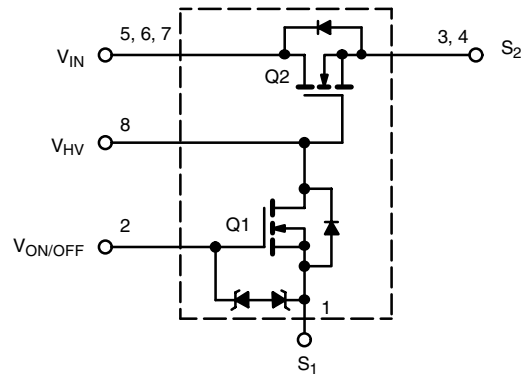
PRODUCT SUMMARY		
V_{DS2} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
30	0.015 at $V_{GS2} = 10$ V	7.0
	0.021 at $V_{GS2} = 4.5$ V	6.0



RoHS COMPLIANT



Ordering Information: Si4701BDY-T1-E3 (Lead (Pb)-free)



ABSOLUTE MAXIMUM RATINGS $T_A = 25$ °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 ^a	7.0	A
		Pulsed ^b	± 30	
Continuous Intrinsic Diode Conduction ^a	I_S	- 1.15		
Maximum Power Dissipation ^a	P_D	1.25	W	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	- 55 to 150	°C	
ESD Rating, MIL-STD-883D Human Body Model (100 pF, 1500 Ω)	ESD	3	kV	

THERMAL RESISTANCE RATINGS				
Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient (t = Steady State) ^a	R_{thJA}	80	100	°C/W
Maximum Junction-to-Foot (Q2)	R_{thJC}	25	30	

SPECIFICATIONS $T_J = 25$ °C, unless otherwise noted						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Reverse Leakage Current	I_{FL}	$V_{IN} = 30$ V, $V_{ON/OFF} = 0$ V, $V_{HV} = 0$ V			1	μ A
Diode Forward Voltage	V_{SD}	$I_S = - 1.15$ A		0.7	1	V
ON Characteristics						
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	Ω
		$V_{ON/OFF} = 0$ 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

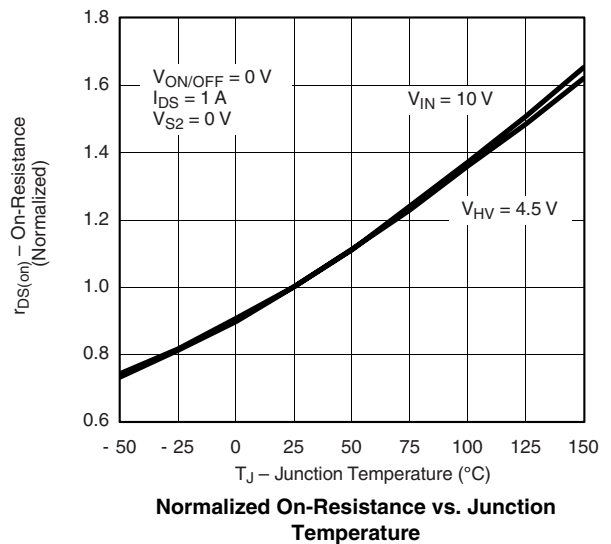
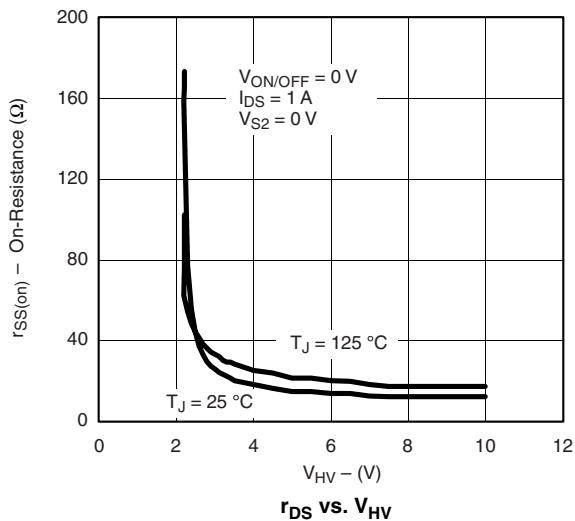
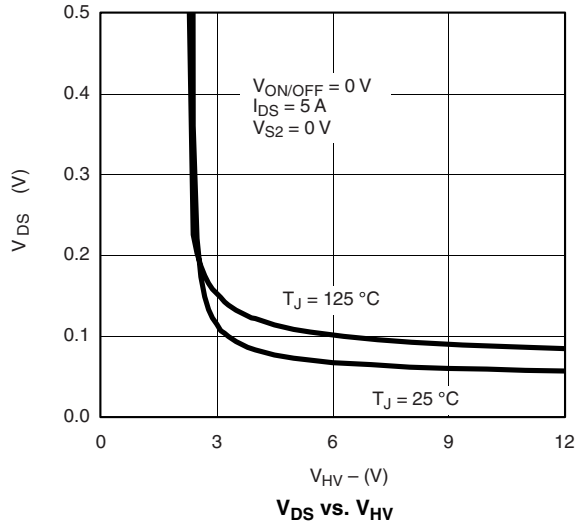
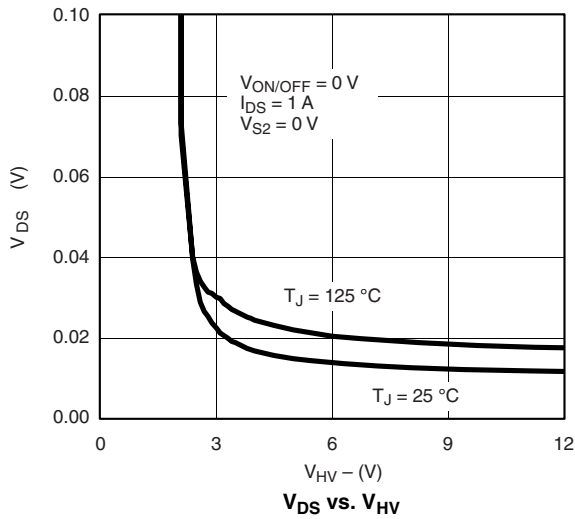
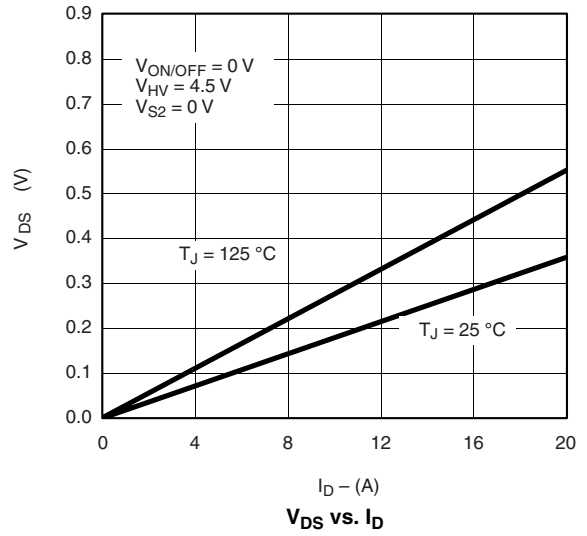
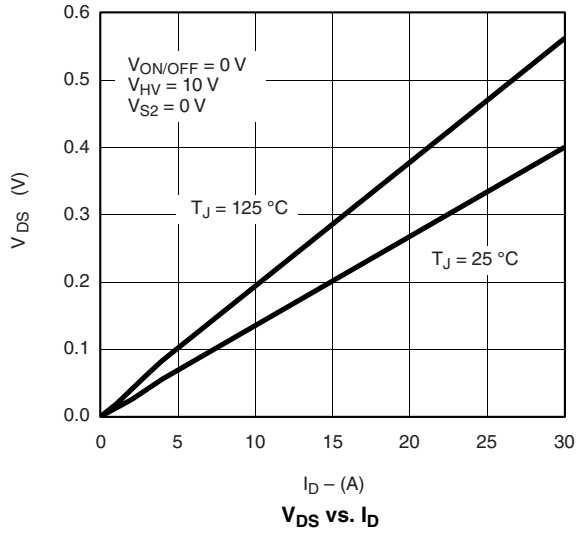
Notes:

- a. Surface Mounted on FR4 Board.
- b. Pulse test; pulse width ≤ 300 μ s, duty cycle ≤ 2 %.

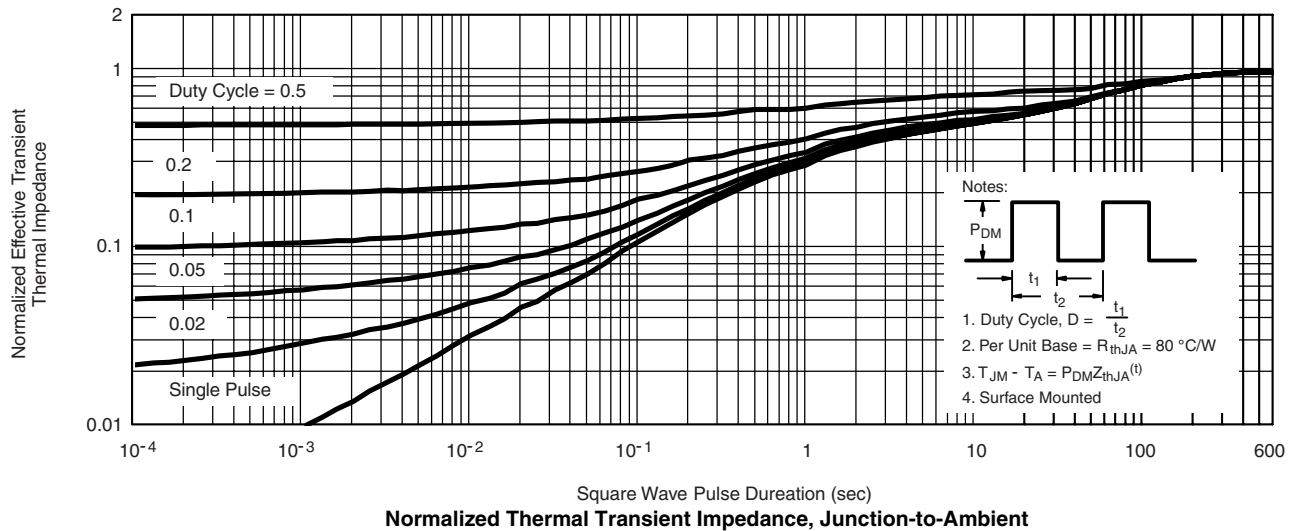
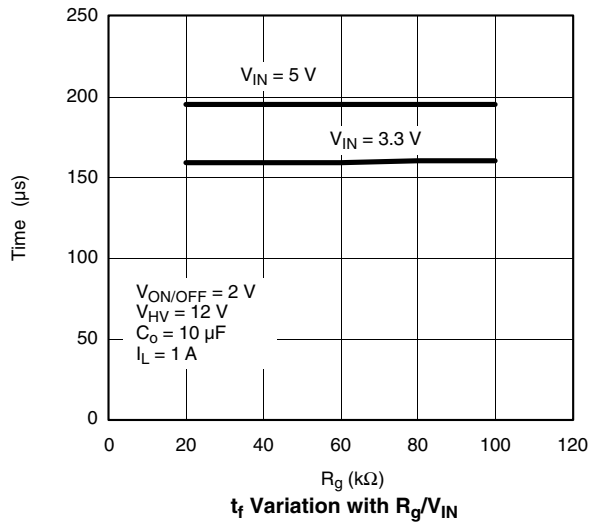
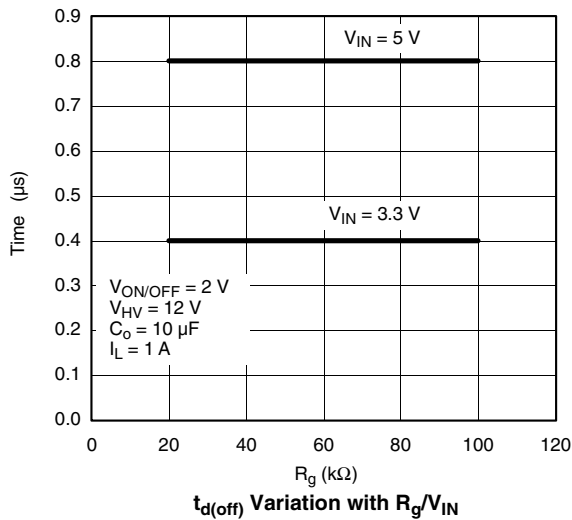
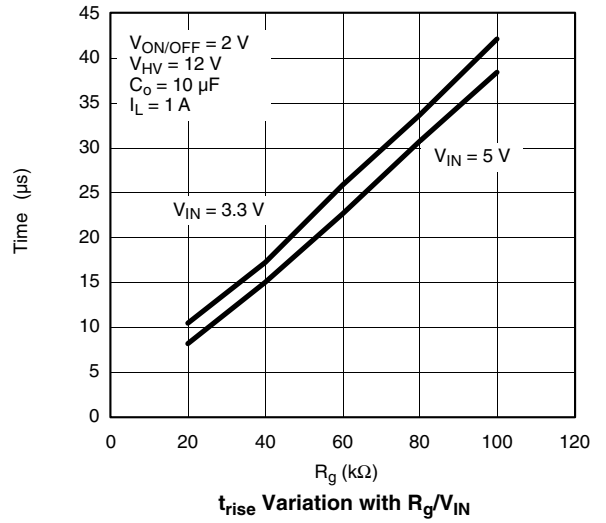
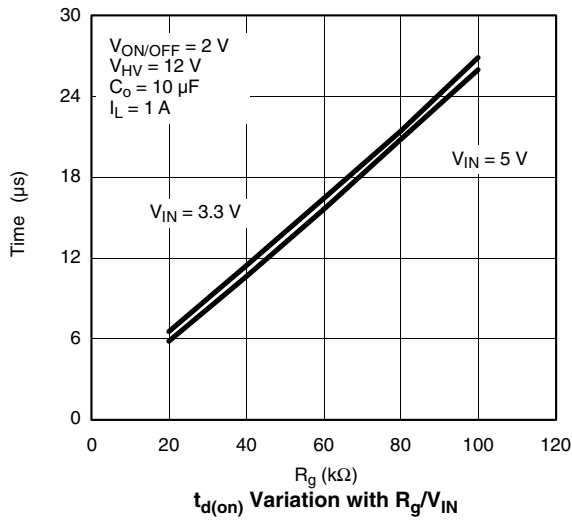
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure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



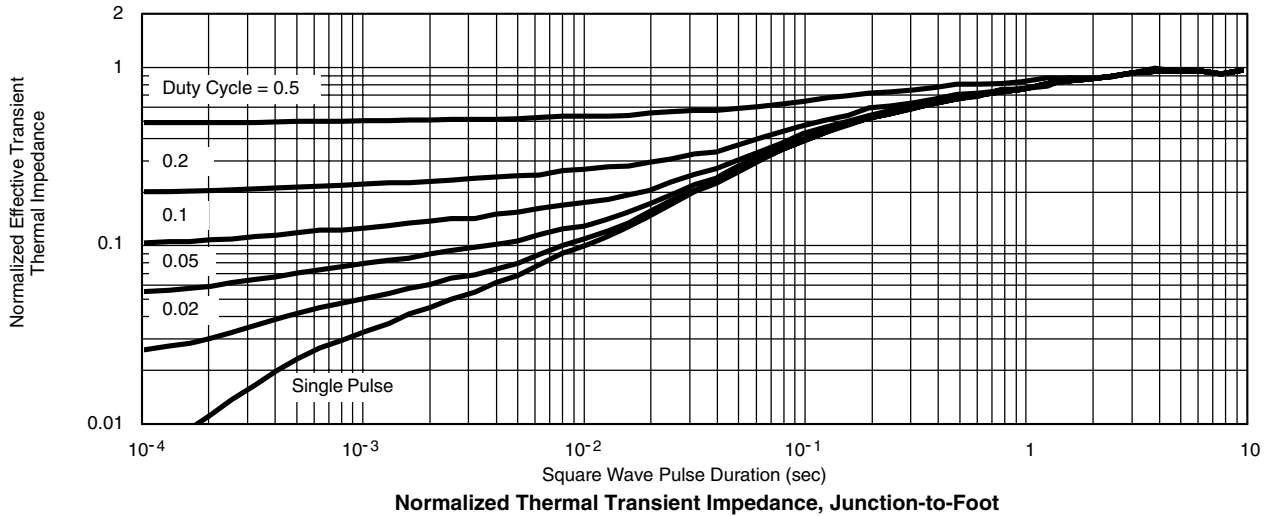
TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



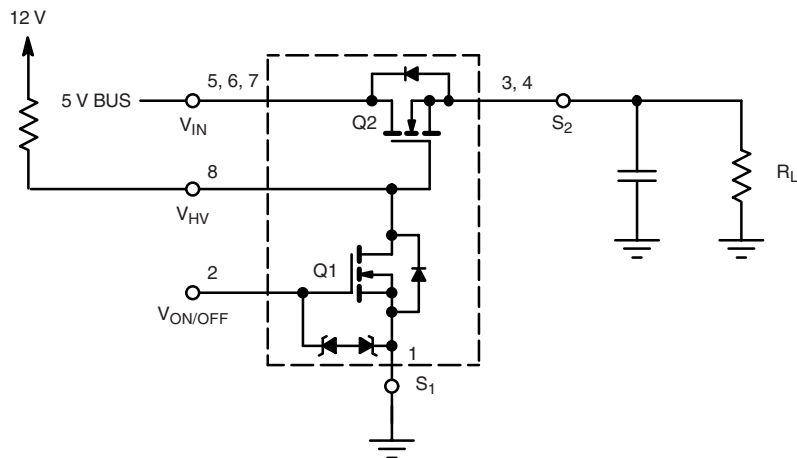
TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



TYPICAL CHARACTERISTICS 25 °C, unless otherwise 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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