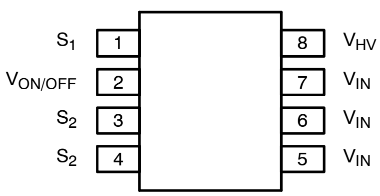
Load Switch with Level-Shift

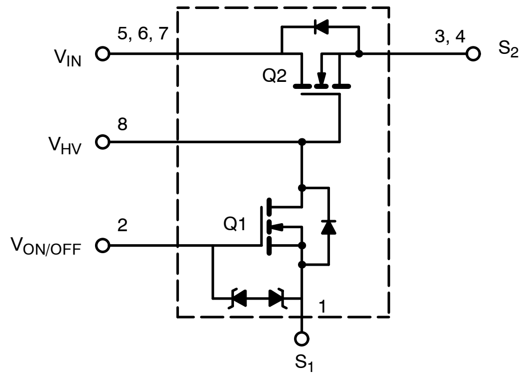
PRODUCT SUMMARY		
V_{DS2} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
30	0.024 @ V_{GS2} = 10 V	5.5
	0.035 @ V_{GS2} = 4.5 V	4.5

SO-8



Top View

Ordering Information: Si4702DY
Si4702DY-T1 (with Tape and Reel)



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	Continuous[a]	I_L	5.5	A
	Pulsed [b]		±20	
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

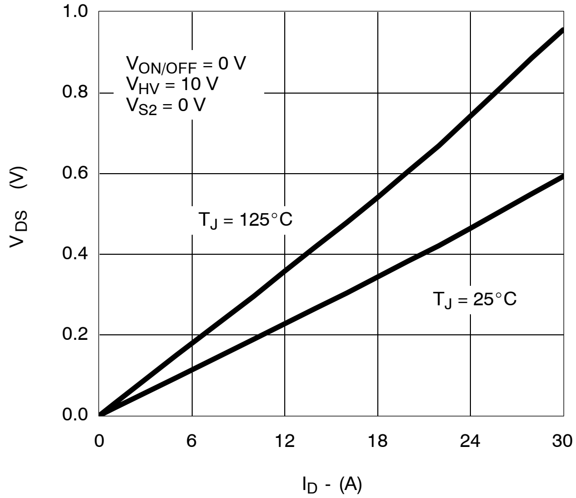
THERMAL RESISTANCE RATINGS				
Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient (t = steady state)[a]	R_{thJA}	83	100	°C/W
Maximum Junction-to-Foot (Q2)	R_{thJC}	25	30	

SPECIFICATIONS (T_J = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	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	µA
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 = 5.5 A, V_{HV} = 10 V, V_{S2} = 0 V		0.019	0.024	Ω
		$V_{ON/OFF}$ = 0 V, I_D = 4.5 A, V_{HV} = 4.5 V, V_{S2} = 0 V		0.028	0.035	
On-State (Q2) Drain-Current	$I_{D(on)}$	V_{IN} - V_{OUT} ≤ 0.1 V, V_{IN} = 5 V, $V_{ON/OFF}$ = 0 V V_{HV} = 10 V	15			A

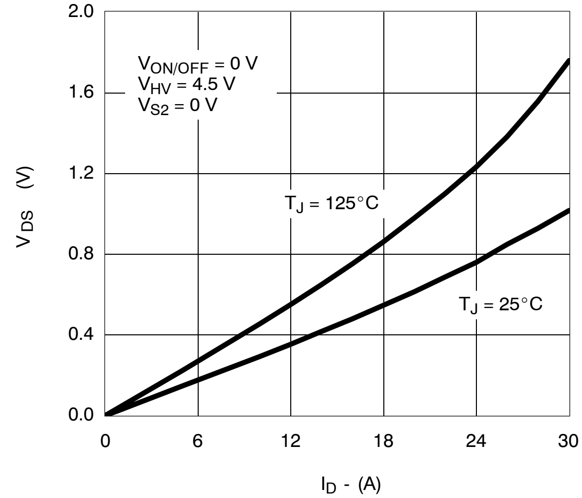
Notes
a. Surface Mounted on FR4 Board.
b. Pulse test: pulse width ≤300 µs, duty cycle ≤2%.

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

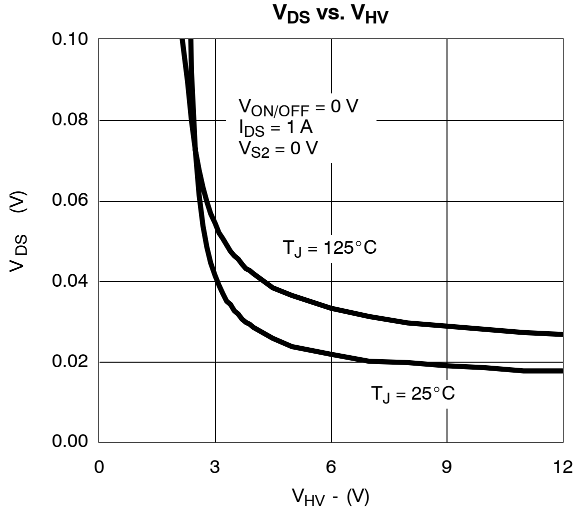
V_{DS} vs. I_D



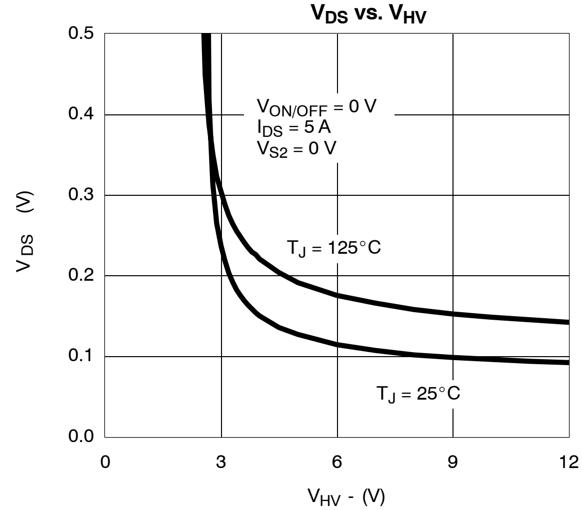
V_{DS} vs. I_D



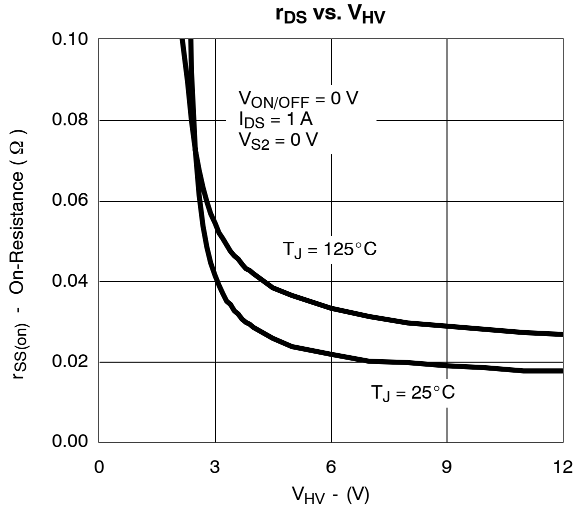
V_{DS} vs. V_{HV}



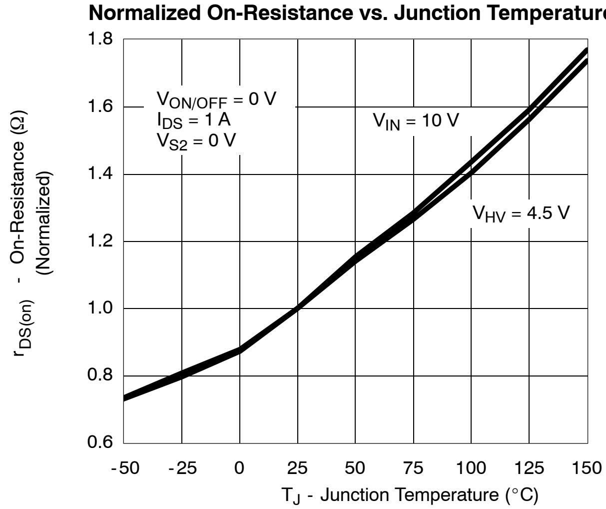
V_{DS} vs. V_{HV}



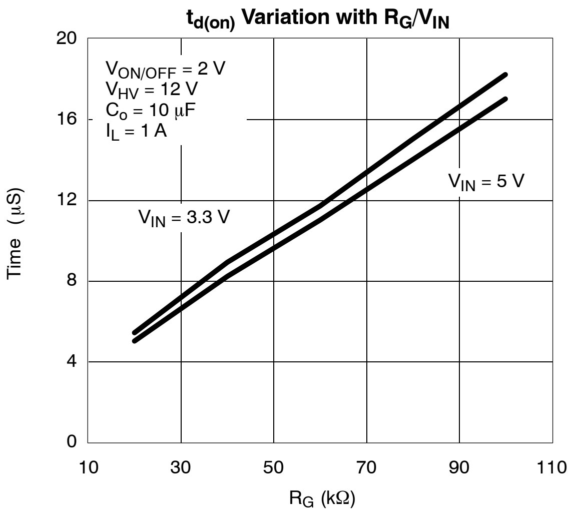
r_{DS} vs. V_{HV}

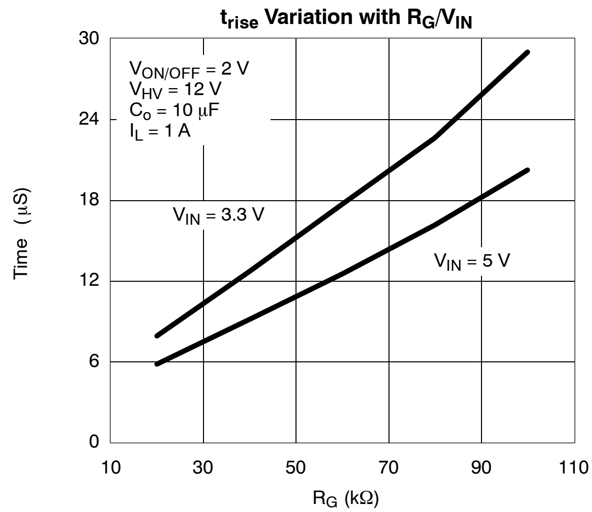


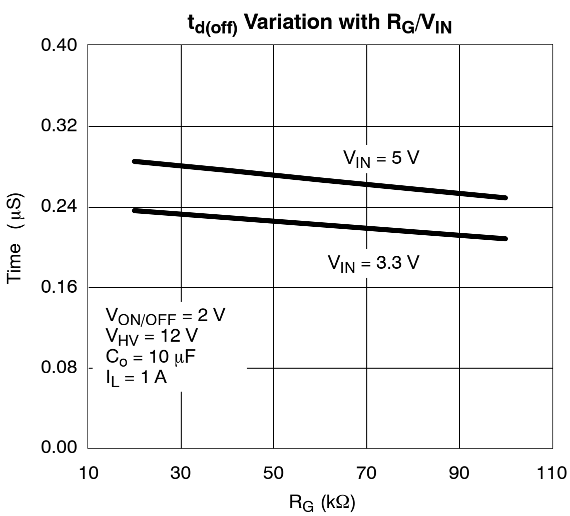
Normalized On-Resistance vs. Junction Temperature

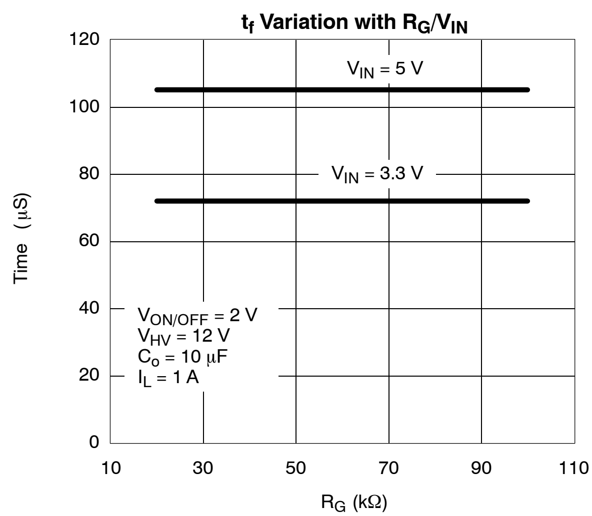


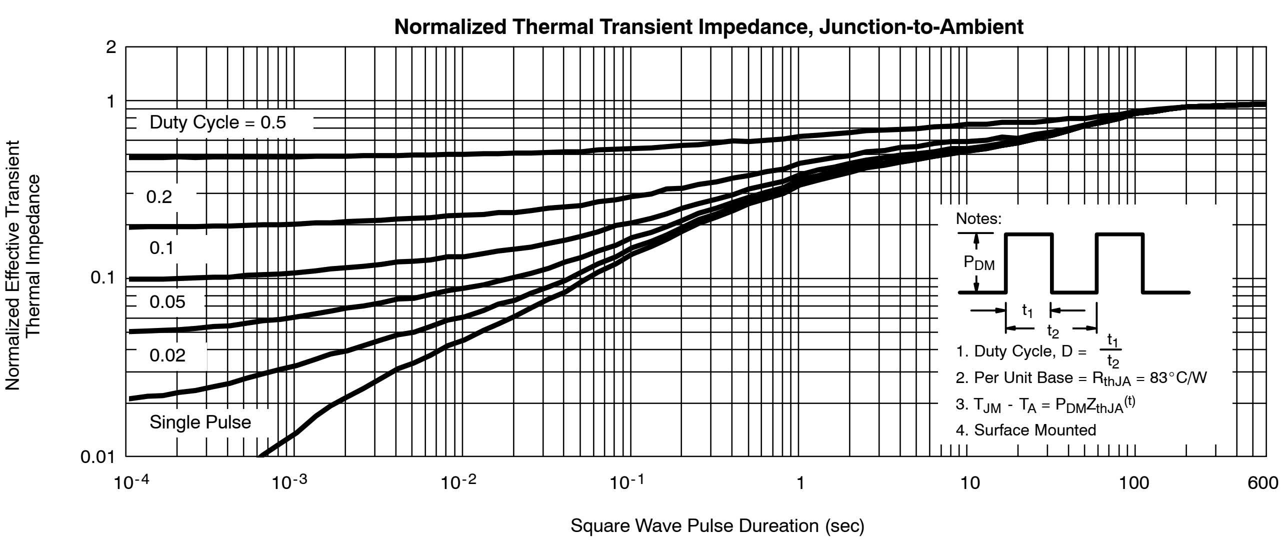
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



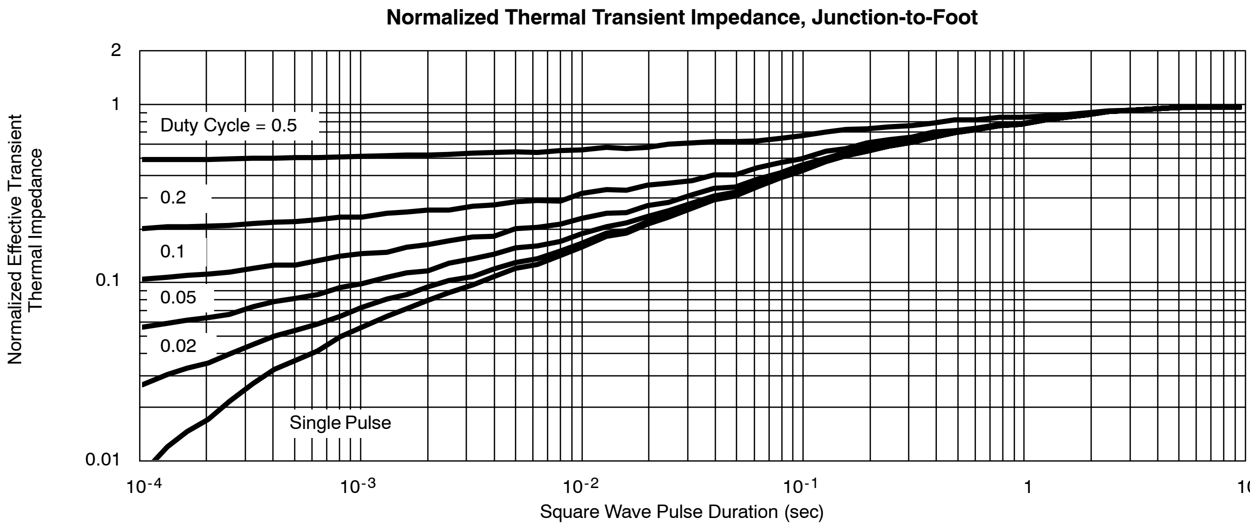




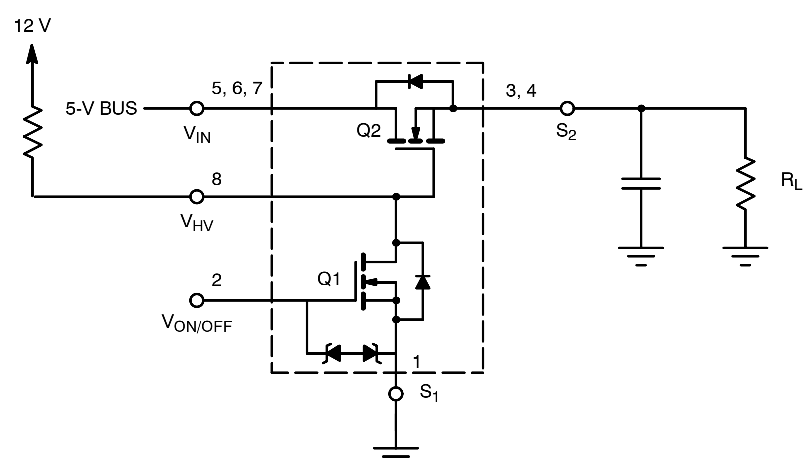




TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL APPLICATION CIRCUIT



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