700E Series
Evaluation Board, Controller & Power CMOS Switch
Ultra-High Speed, High Power, Removable Modules

XSYSTOR

PRODUCT FLYER
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General Description

The 700 Series Evaluation Board is a complete solution with a Controller and Power CMOS Switch. They are used for demonstrating GaN in Pulsed applications that require both Rise and Fall Times to clock faster than <<200 nsec and Propagation Times of <<200 nsec. The modules are removable for real-world applications when the evaluation phase is complete. Bias adjustment, power sequence, and protection are provided when interfaced to GaN Eval/Test board with minimal inductive & capacitive loads.

Features

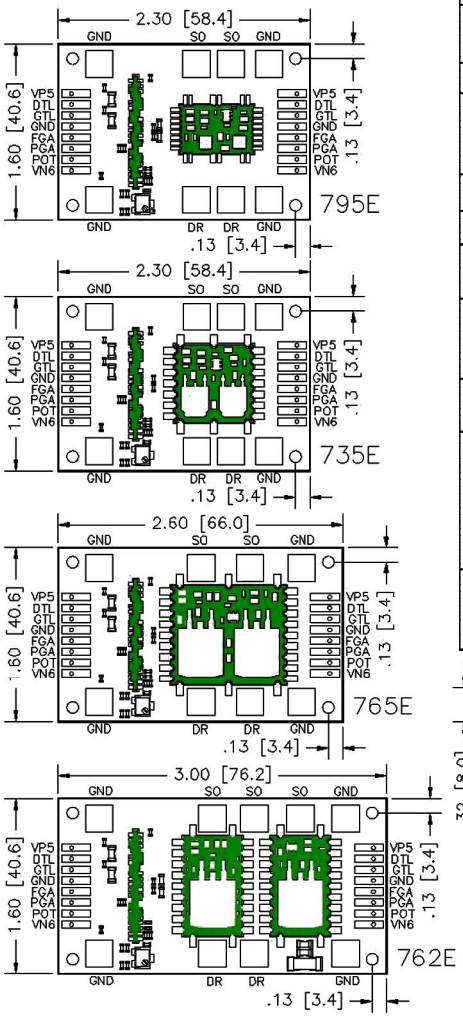
- Large mounting pads and pitched holes are ideal for banana plug receptacles, headers, & wire jumpers.
- Switch is rated for 100V, Ultra-low Rds ON, Operation up to 150°C, with derated voltage and current.
- Utilize units at half the rated current for best results.
- Controller: Choice of 100L or 200L. Single power supply. Independent or Sequential Drain and Gate Switching.
- On-board potentiometer for fine gate bias adjustment.

Specification Snapshot

Parameter	Min	Max
Supply (+) Voltage	+20 V	+65 V
Supply (-) Voltage, Optional	-6 V	0 V
Internal (-) Supply V, Gate Pinchoff	-4.3 V	
Internal (-) Supply I	-30 mA	
Gate Bias Voltage Range	-4.3V	-0.5 V
Gate Threshold Shutdown Range	-3.0 V	-1.0V
TTL Voltage Logic High	+3.6 V	+5.0 V
TTL Voltage Logic Low	0 V	+1.4 V
Avg Current from MOS peak rating		50%
MOS Rds ON (40A to 14A)	0.07 Ω	0.22 Ω
Drain ON Propagation Delay, cmos		150ns
Drain ON Rise Time, cmos		200ns
Drain OFF Propagation Delay, cmos		250ns
Drain OFF Fall Time, cmos		200ns
Soldering Temp (10 sec)		+195°C
Operating Temperature	-40°C	+85°C
Storage Temperature	-65°C	+150°C

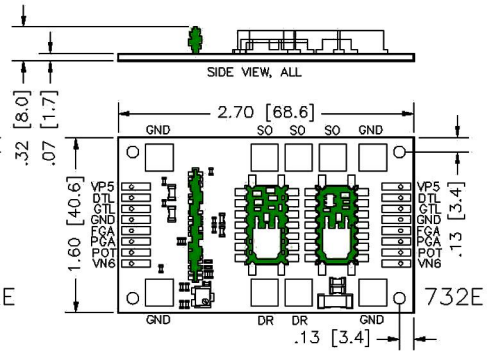
Propagation Delay is measured from 90% of TTL to 10% of Drain Voltage with device load . Rise/Fall Times are measured at 10% and 90% of signal. Both measurements are summed for total time.

Eval Board Configurations



I/O Pin Descriptions

LABEL	DESCRIPTION
VP5	Optional +5V max Supply Voltage. Leave open
DTL	Drain Switch Enable TTL Input
GTL	Gate Switch Enable TTL Input. Usually tied to DTL. Disconnect for independent switching
GND	Ground
FGA	Fixed Bias Voltage to Transistor Gate
PGA	Pulsed Bias Voltage to Transistor Gate, as enabled by GTL
POT	Analog Bias Voltage Input. Leave open when trim-pot is utilized. Temp-comp input voltage
VN6	Optional -6V max Supply Voltage for Gate bias current boost. Leave open
DR	High Voltage Output to Transistor Drain. Avoid excess wires or lines to minimize inductive parasitic. Max capacitive load is 500pF for optimum switching speed.
SO	High Voltage Input Source up to +65VDC. Connect high value storage capacitors here



Ordering Information

MODEL * ^	MODULE CONTENT ~ °
732E_2R6	(1) 100X + 332P & 332N
732E_2R0	(2) 200X + 332P & 332N
732E_1R4	12A peak, 6A avg max
735E_2R6	(1) 100X + 335CT
735E_2R0	(2) 200X + 335CT
735E_1R4	12A peak, 6A avg max
762E_2R6	(1) 100X + 362P & 362N
762E_2R0	(2) 200X + 362P & 362N
762E_1R4	36A peak, 16A avg max
763E_2R6	(1) 100X + 2 x 362P
763E_2R0	(2) 200X + 2 x 362P
763E_1R4	36A peak, 16A avg max
765E_2R6	(1) 100X + 365CT
765E_2R0	(2) 200X + 365CT
765E_1R4	36A peak, 16A avg max
792E_2R6	(1) 100X + 392P
792E_2R0	(2) 200X + 392P
792E_1R4	8A peak, 4A avg max
795E_2R6	(1) 100X + 395CT
795E_2R0	(2) 200X + 395CT
795E_1R4	8A peak, 4A avg max

* Select (1) 100X or (2) 200X Controller
^ All models have provisions for fine adjusting Vgs shutdown threshold to desired level. Refer to 100 or 200 Controller Spec Sheets for more information
~ Select preset shutdown at Vgs = -2.6V, -2.0V, or -1.4V
° Remove modules at solder melting point of <195°C

11331 E. 183rd STREET # 209, CERRITOS CA 90703, PHONE/FAX: 888-968-7755, EMAIL: SALES@XSYSTOR.COM, WWW.XSYSTOR.COM