Description

The G16P03 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a load switch or in PWM applications.

General Features

| VDSS	RDS(ON) @-10V (typ)	ID
-30V	10 mΩ	-16A

● High Power and current handing capability

● Lead free product is acquired

● Surface mount package

Application

● PWM applications

● Load switch

● Power management
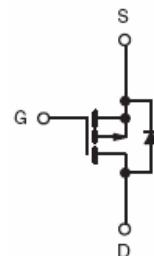
Schematic diagram
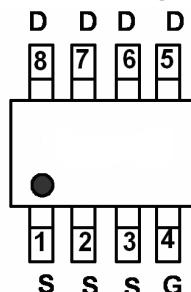
Marking and pin assignment
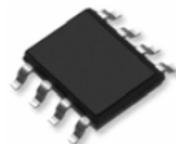
SOP-8 top view

Absolute Maximum Ratings (T$_A$=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	-16	A
Drain Current-Pulsed (Note 1)	I_{DM}	-48	A
Maximum Power Dissipation	P_D	3	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	℃

Thermal Characteristic

	Symbol	Limit	Unit
Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	41.67	℃/W

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol			Typ		
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=-250μA	-30	-33	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V,V_{GS}=0V	-	-	-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	-1	-1.5	-3	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-10A	-	10	15	mΩ
		V_{GS}=-4.5V, I_D=-7A	-	14	25	mΩ
Forward Transconductance	g_{FS}	V_{DS}=-10V,I_D=-10A	20	-	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C_{Iss}	V_{DS}=-15V,V_{GS}=0V, F=1.0MHz	-	1750	-	PF
Output Capacitance	C_{oss}		-	215	-	PF
Reverse Transfer Capacitance	C_{rss}		-	180	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-15V, ID=-10A, V_{GS}=-10V,R_{GEN}=1Ω	-	9	-	nS
Turn-on Rise Time	t_r		-	8	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	28	-	nS
Turn-Off Fall Time	t_f		-	10	-	nS
Total Gate Charge	Q_g	V_{DS}=-15V,I_D=-10A,V_{GS}=-10V	-	24	-	nC
Gate-Source Charge	Q_{gs}		-	3.5	-	nC
Gate-Drain Charge	Q_{gd}		-	6	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=-2A	-	-	-1.2	V

Notes:

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

2. Surface Mounted on FR4 Board, t ≤ 10 sec.

3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

4. Guaranteed by design, not subject to production

Typical Electrical and Thermal Characteristics
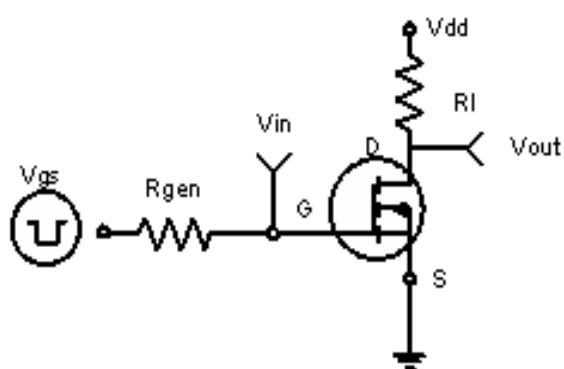

**Figure 1:Switching Test Circuit**
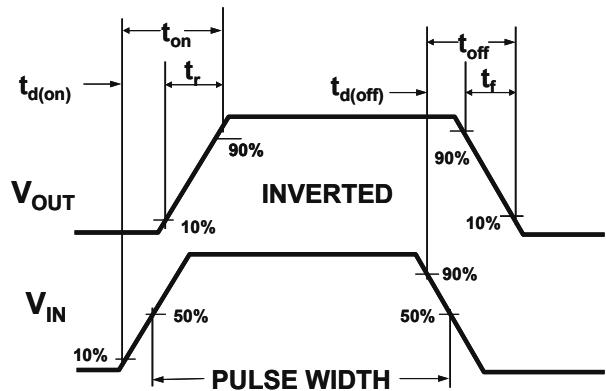
Figure 2:Switching Waveforms

P_D Power(W)

T_J-Junction Temperature(℃)
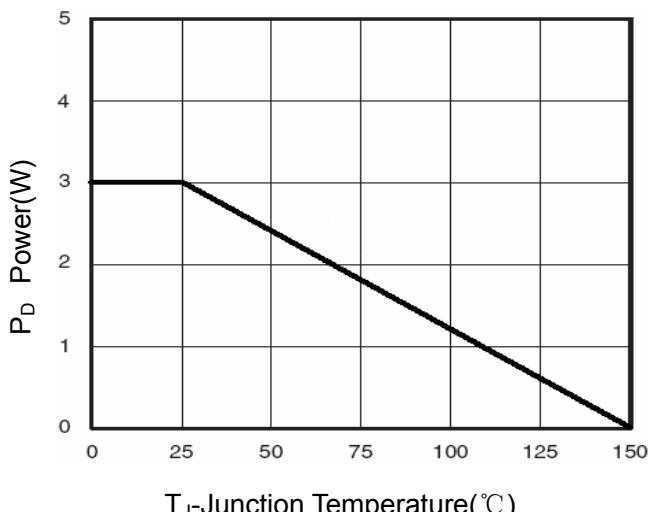
Figure 3 Power Dissipation

I_D- Drain Current (A)

T_J-Junction Temperature(℃)

Figure 4 Drain Current

I_D- Drain Current (A)

V_{GS} = 10 V thru 5 V

V_{GS} = 4 V

V_{GS} = 3 V

Vds Drain-Source Voltage (V)
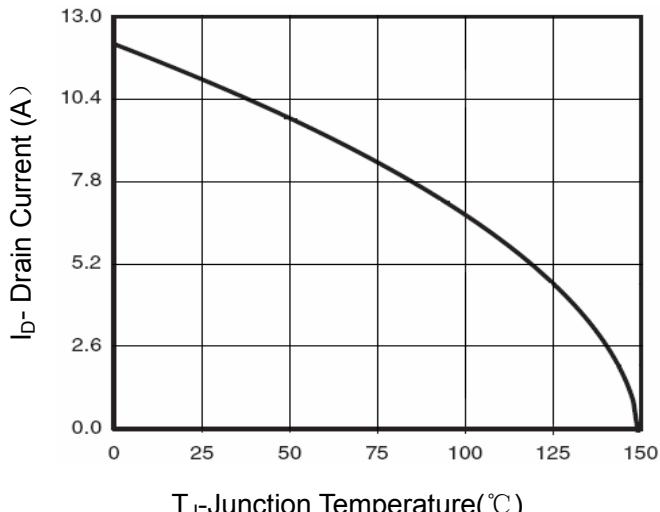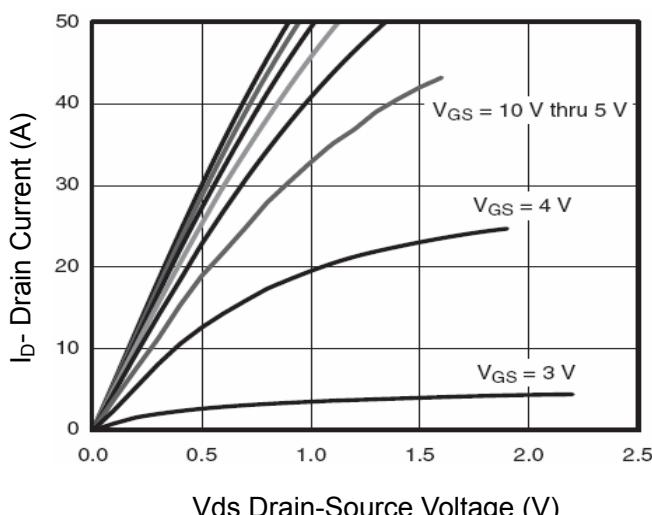
Figure 5 Output CHARACTERISTICS

Rdson On-Resistance(mΩ)

V_{GS} = 4.5 V

V_{GS} = 10 V

I_D- Drain Current (A)
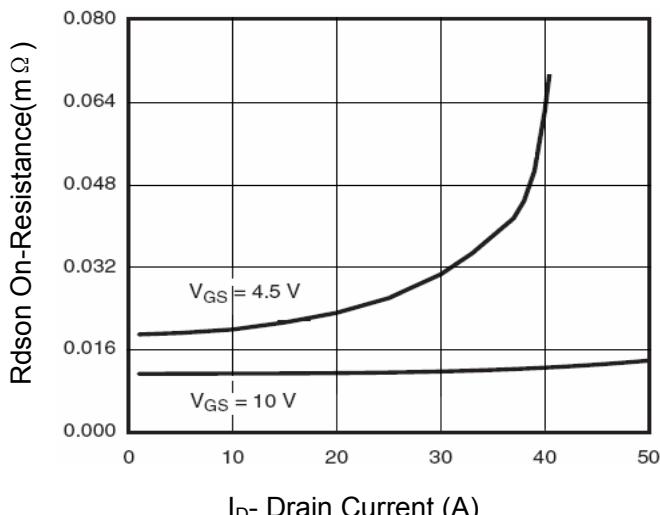
Figure 6 Drain-Source On-Resistance
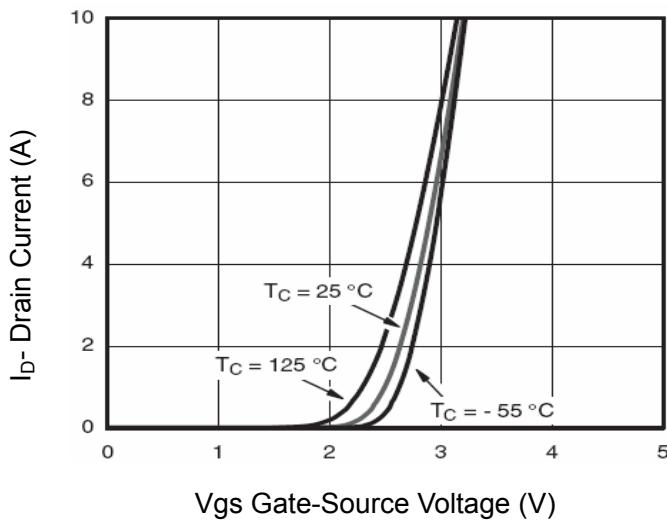
Figure 7 Transfer Characteristics
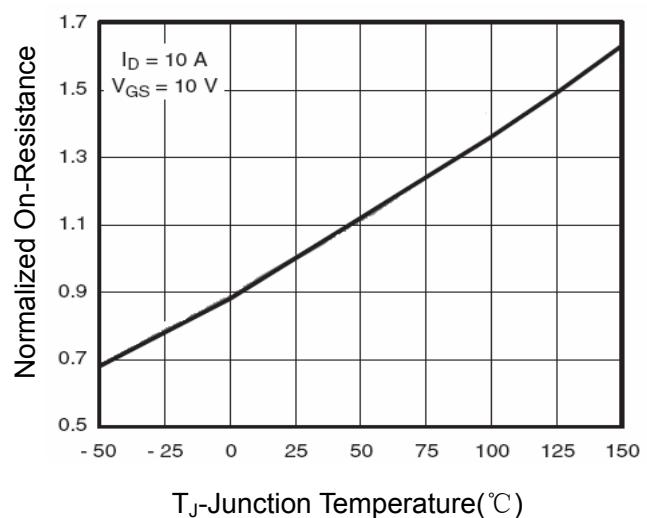
Figure 8 Drain-Source On-Resistance
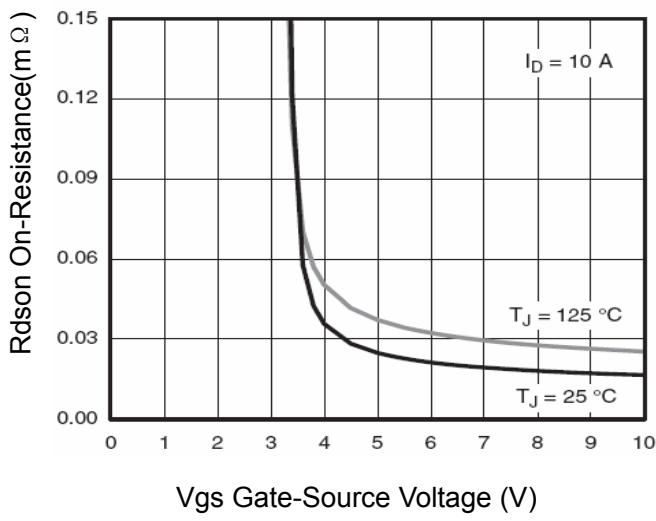
Figure 9 Rdson vs Vgs
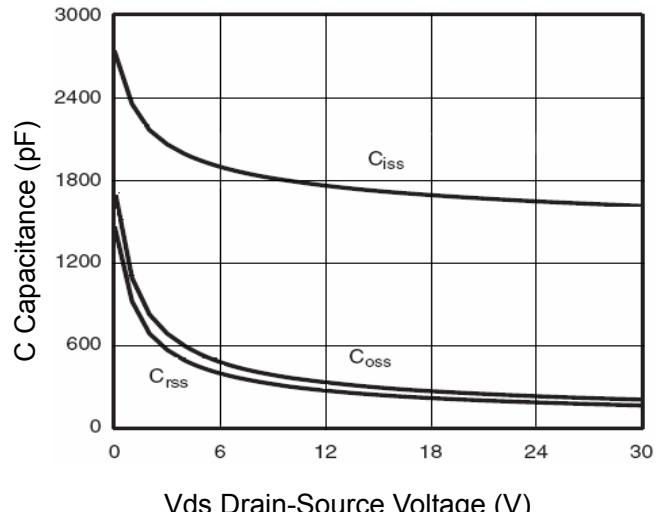
Figure 10 Capacitance vs Vds
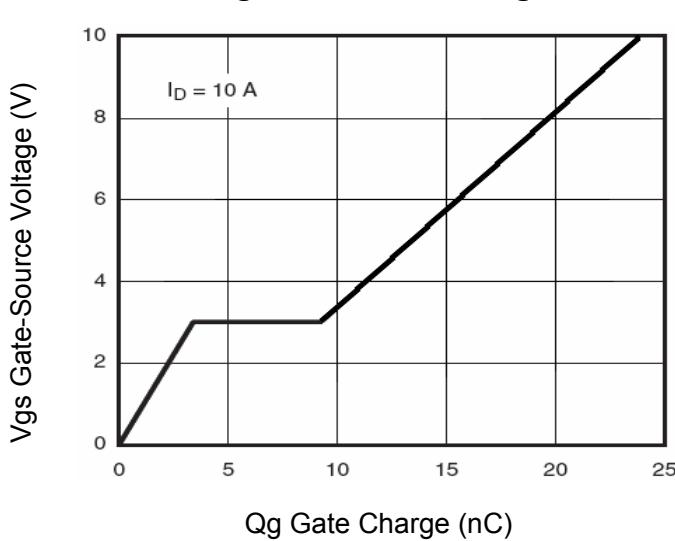
Figure 11 Gate Charge
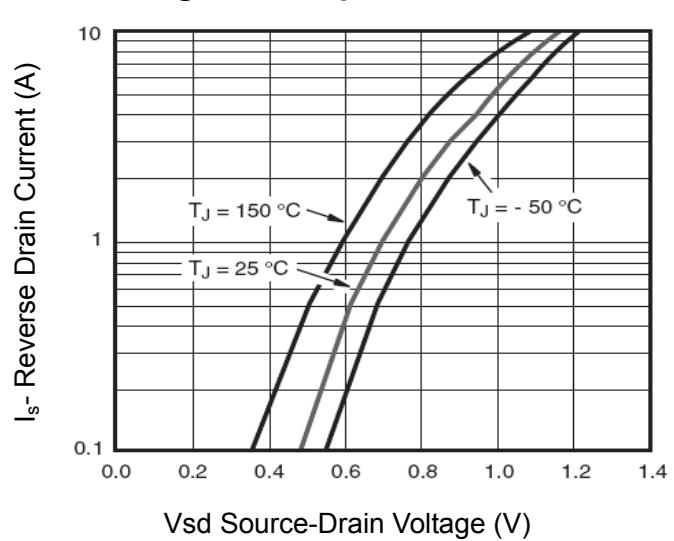
Figure 12 Source- Drain Diode Forward
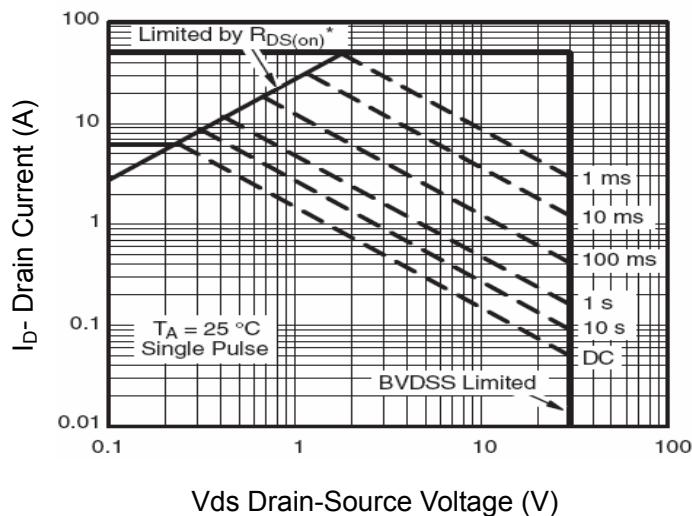
Figure 13 Safe Operation Area
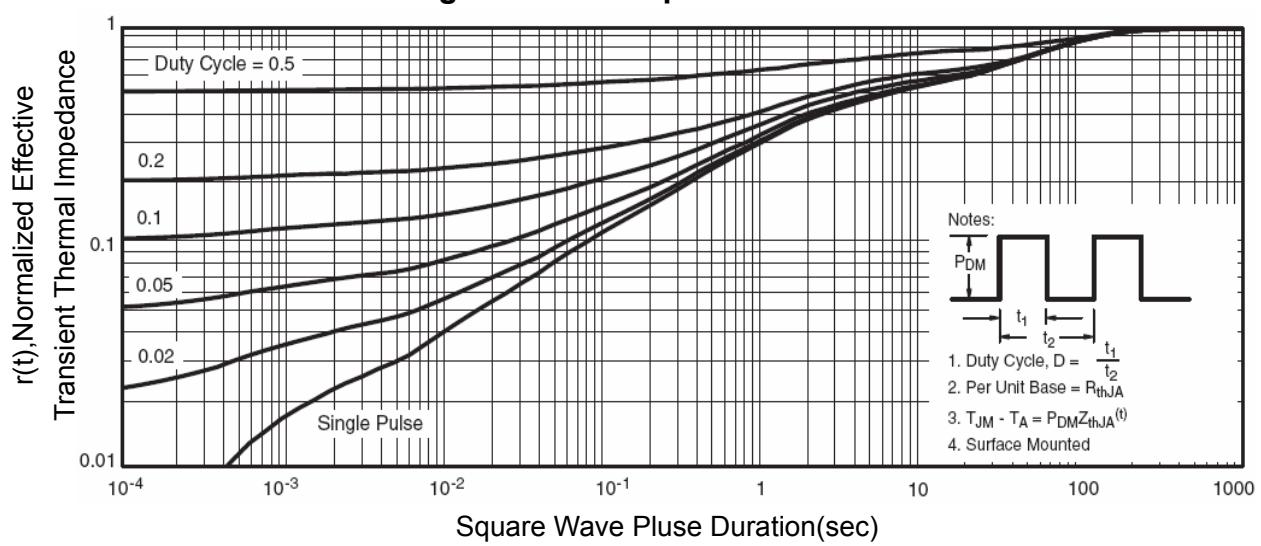
Figure 14 Normalized Maximum Transient Thermal Impedance

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET *category:*

Click to view products by GOFORD *manufacturer:*

Other Similar products are found below :

614233C 648584F MCH3443-TL-E MCH6422-TL-E FDPF9N50NZ NTNS3A92PZT5G IRFD120 IRFF430 JANTX2N5237 2N7000 2SK2464-TL-E FCA20N60_F109 FDZ595PZ 2SK2267(Q) 2SK2545(Q,T) 405094E 423220D MIC4420CM-TR VN1206L 614234A 715780A SSM6J414TU,LF(T 751625C PSMN4R2-30MLD TK31J60W5,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7 EFC2J004NUZTDG FCAB21350L1 P85W28HP2F-7071 DMN1053UCP4-7 NTE2384 NTE2969 NTE6400A DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 SSM6P54TU,LF DMP22D4UFO-7B IPS60R3K4CEAKMA1 DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 STU5N65M6 C3M0021120D DMN13M9UCA6-7 BSS340NWH6327XTSA1 MCM3400A-TP DMTH10H4M6SPS-13 IPS60R1K0PFD7SAKMA1