GT6680

Data Sheet

YGMOS Technology Crop.

30V N-Channel Enhancement-Mode MOSFET 30V N 沟道增强型 MOS 管

VDS= 30V

$R_{DS(ON)}$, Vgs@10V, Ids@12A = 10.5mΩ

$R_{DS(ON)}$, Vgs@4.5V, Ids@12A = 15mΩ

Features 特性

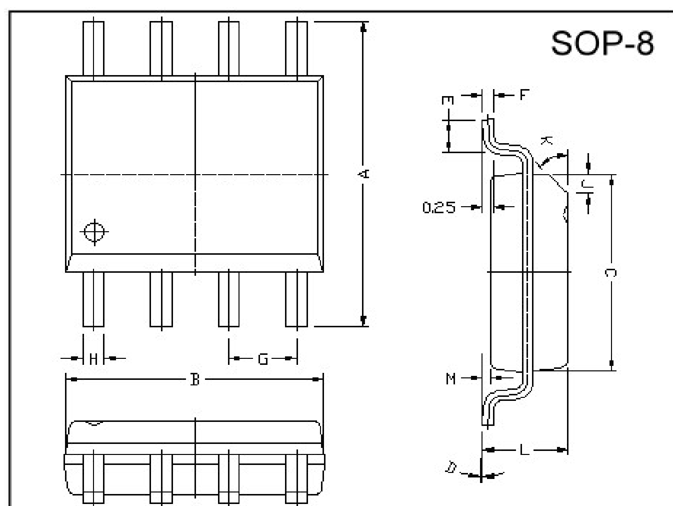
Advanced trench process technology 高级的加工技术

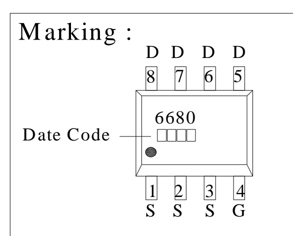
High Density Cell Design For Ultra Low On-Resistance 极低的导通电阻高密度的单元设计

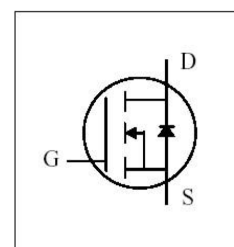
Fully Characterized Avalanche Voltage and Current 完好的雪崩性能

Improved Shoot-Through FOM 改进的成型工艺

Package Dimensions 封装尺寸及外形图







REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	M	0.10	0.25
B	4.80	5.00	H	0.35	0.49
C	3.80	4.00	L	1.35	1.75
D	0°	8°	J	0.375 REF.	
E	0.40	0.90	K	45°	
F	0.19	0.25	G	1.27 TYP.	

Maximum Ratings and Thermal Characteristics (TA = 25oC unless otherwise noted) 25 °C 极限参数和热特性

Parameter 极限参数		Symbol 符号	Limit 范围	Unit 单位
Drain-Source Voltage 漏源电压		V_{DS}	30	V
Gate-Source Voltage 栅源电压		V_{GS}	± 20	V
Continuous Drain Current 连续漏极电流		I_D	12	A
Pulsed Drain Current 脉冲漏极电流		I_{DM}	48	A
Maximum Power Dissipation 最大耗散功率	TA = 25°C	P_D	2.5	W
	TA = 75°C		1.2	
Operating Junction and Storage Temperature Range 使用及储存温度		T_J, T_{stg}	-55 to 150	°C
Avalanche Energy with Single Pulse 雪崩能量		EAS	150	mJ
Junction-to-Case Thermal Resistance 结壳热阻		$R_{θJC}$	25	°C/W
Junction-to-Ambient Thermal Resistance (PCB mounted) 结环热阻		$R_{θJA}$	50	°C/W

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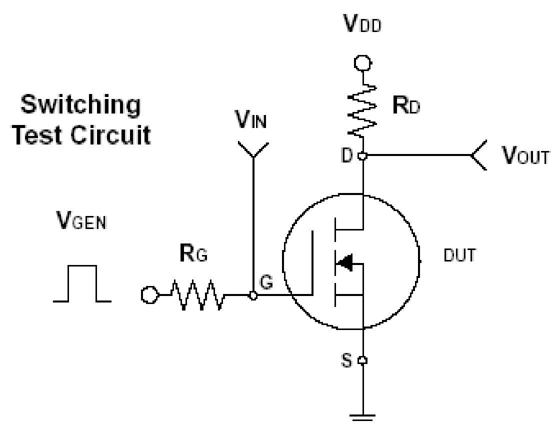
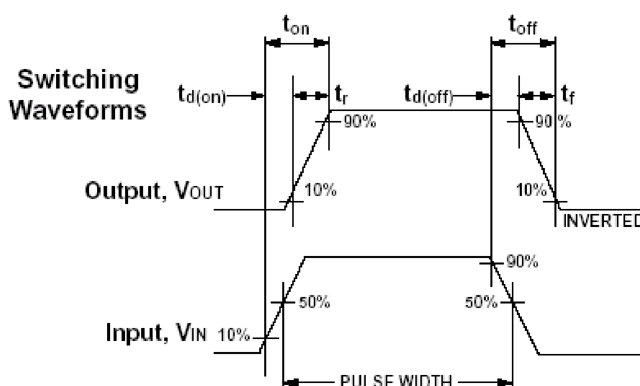
ELECTRICAL CHARACTERISTICS 一般电气特性

Parameter 参数	符号	Test Condition 测试条件	最小值	典型值	最大值	单位
Static 静态参数						
Drain-Source Breakdown Voltage 漏源击穿电压	BV_{DSS}	V_{GS} = 0V, I_D = 250uA	30			V
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 12A		11.0	15.0	mΩ
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	V_{GS} = 10V, I_D = 12A		8.5	10.5	
Gate Threshold Voltage 开启电压	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = 250uA	1	1.8	3	V
Zero Gate Voltage Drain Current 零栅压漏极电流	I_{DSS}	V_{DS} = 24V, V_{GS} = 0V			1	uA
Gate Body Leakage 漏极短路时截止栅电流	I_{GSS}	V_{GS} = ± 20V, V_{DS} = 0V			±100	nA
Forward Transconductance 正向跨导	g_{fs}	V_{DS} = 15V, I_D = 12A		64	__	S
Dynamic 动态参数						
Total Gate Charge 栅极总电荷	Q_g	V_{DS} = 15V, I_D = 12A V_{GS} = 5V		12	45	nC
Gate-Source Charge 栅-源极电荷	Q_{gs}			4.5		
Gate-Drain Charge 栅-漏极电荷	Q_{gd}			3.6		
Turn-On Delay Time 导通延迟时间	$t_{d(on)}$	V_{DD} = 15V, R_G = 6Ω I_D = 1A, V_{GS} = 10V		22	35	ns
Turn-On Rise Time 导通上升时间	t_r			13	20	
Turn-Off Delay Time 关断延迟时间	$t_{d(off)}$			82	125	
Turn-Off Fall Time 关断下降时间	t_f			30	45	
Input Capacitance 输入电容	C_{iss}	V_{DS} = 15V, V_{GS} = 0V f = 1.0 MHz		1180		pF
Output Capacitance 输出电容	C_{oss}			270		
Reverse Transfer Capacitance 反向传输电容	C_{rss}			145		
Source-Drain Diode 源漏二极管参数						
Max. Diode Forward Current 最大正向电流	I_S				2.0	A
Diode Forward Voltage 正向电压	V_{SD}	I_S = 2A, V_{GS} = 0V			1.5	V

Note: Pulse test: pulse width <= 300us, duty cycle<= 2% 注意：脉冲测试：脉冲宽度<= 300us 死区<= 2%





N-Channel 30-V (D-S) MOSFET

Typical Characteristics (T_J =25℃ Noted)