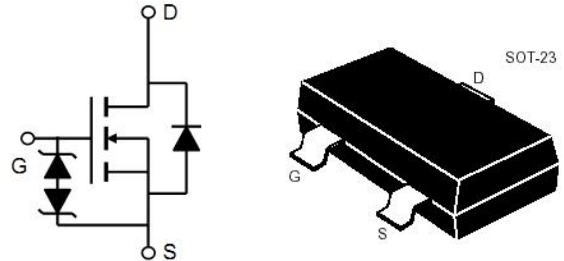




GM3416

SOT-23 場效應晶體管(SOT-23 Field Effect Transistors)



**N-Channel Enhancement-Mode MOS FET With ESD**  
N 溝道增強型帶靜電保護 MOS 場效應管

■ **MAXIMUM RATINGS 最大額定值**

Characteristic 特性參數	Symbol 符號	Rat 額定值	Unit 單位
Drain-Source Voltage 漏極 - 源極電壓	$BV_{DSS}$	20	V
Gate- Source Voltage 柵極 - 源極電壓	$V_{GS}$	$\pm 8$	V
Drain Current (continuous) 漏極電流 - 連續	$I_D$	6.5	A
Drain Current (pulsed) 漏極電流 - 脈沖	$I_{DM}$	30	A
Total Device Dissipation 總耗散功率 $T_A=25^\circ\text{C}$ 環境溫度為 $25^\circ\text{C}$	$P_D$	1400	mW
Junction 結溫	$T_J$	150	$^\circ\text{C}$
Storage Temperature 儲存溫度	$T_{stg}$	-55to+150	$^\circ\text{C}$

■ **DEVICE MARKING 打標**

**GM3416=AF**

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■ELECTRICAL CHARACTERISTICS 電特性

( $T_A=25^{\circ}\text{C}$  unless otherwise noted 如無特殊說明，溫度為  $25^{\circ}\text{C}$ )

Characteristic 特性參數	Symbol 符號	Min 最小值	Typ 典型值	Max 最大值	Unit 單位
Drain-Source Breakdown Voltage 漏極-源極擊穿電壓( $I_D = 250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	20	—	—	V
Gate Threshold Voltage 柵極開啓電壓( $I_D = 250\mu\text{A}, V_{GS} = V_{DS}$ )	$V_{GS(th)}$	0.4	—	1	V
Diode Forward Voltage Drop 內附二極管正向壓降( $I_S=1\text{A}, V_{GS}=0\text{V}$ )	$V_{SD}$	—	—	1	V
Zero Gate Voltage Drain Current 零柵壓漏極電流( $V_{GS}=0\text{V}, V_{DS}= 16\text{V}$ ) ( $V_{GS}=0\text{V}, V_{DS}= 16\text{V}, T_A=55^{\circ}\text{C}$ )	$I_{DSS}$	—	—	1 5	$\mu\text{A}$
Gate Body Leakage 柵極漏電流( $V_{GS}=\pm 4.5\text{V}, V_{DS}=0\text{V}$ ) ( $V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$ )	$I_{GSS}$	—	—	$\pm 1$ $\pm 10$	$\mu\text{A}$
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D= 6.5\text{A}, V_{GS}= 4.5\text{V}$ )	$R_{DS(ON)}$	—	—	22	$\text{m}\Omega$
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D= 5.5\text{A}, V_{GS}= 2.5\text{V}$ )	$R_{DS(ON)}$	—	—	26	$\text{m}\Omega$
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D= 5\text{A}, V_{GS}= 1.8\text{V}$ )	$R_{DS(ON)}$	—	—	34	$\text{m}\Omega$
Input Capacitance 輸入電容 ( $V_{GS}=0\text{V}, V_{DS}= 10\text{V}, f=1\text{MHz}$ )	$C_{ISS}$	—	660	—	pF
Output Capacitance 輸出電容 ( $V_{GS}=0\text{V}, V_{DS}= 10\text{V}, f=1\text{MHz}$ )	$C_{OSS}$	—	160	—	pF
Reverse Transfer Capacitance 回饋電容 ( $V_{GS}=0\text{V}, V_{DS}= 10\text{V}, f=1\text{MHz}$ )	$C_{RSS}$	—	87	—	pF
Turn-ON Time 開啓時間 ( $V_{DS}= 10\text{V}, I_D= 3\text{A}, R_{GEN}=6\Omega$ )	$t_{(on)}$	—	8	—	ns
Turn-OFF Time 關斷時間 ( $V_{DS}= 10\text{V}, I_D= 3\text{A}, R_{GEN}=6\Omega$ )	$t_{(off)}$	—	60	—	ns
ESD Rating 靜電保護範圍	ESD	2000V HBM			

Pulse Width $\leq 300\mu\text{s}$ ; Duty Cycle $\leq 2.0\%$

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■ TYPICAL CHARACTERISTIC CURVE 典型特性曲线

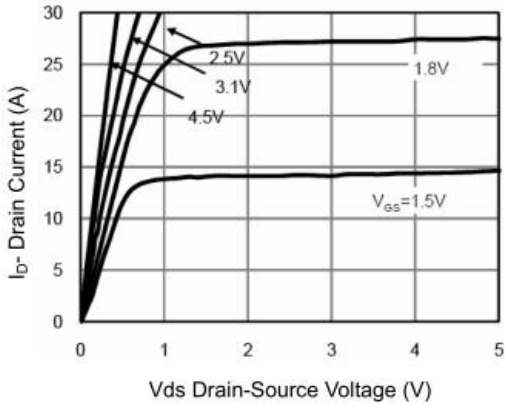


Figure 1: Output Characteristics

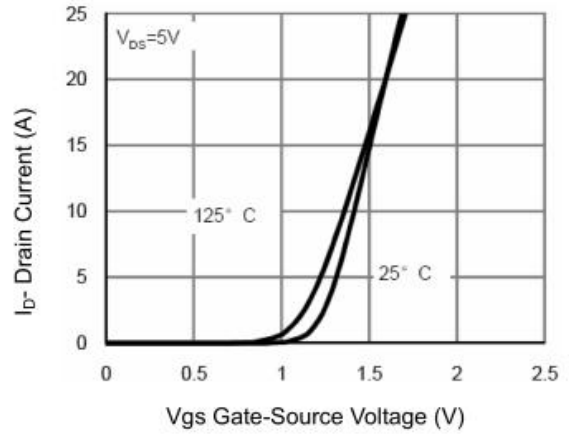


Figure 2: Transfer Characteristics

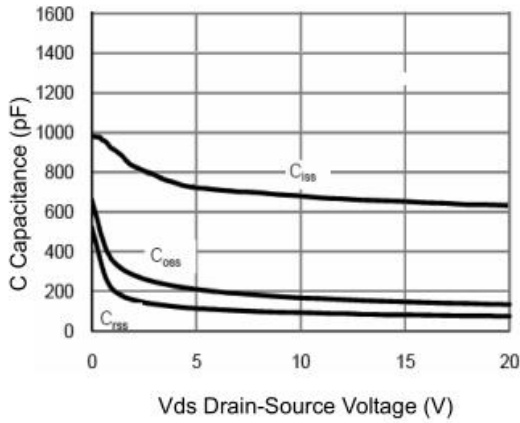


Figure 3: Capacitance

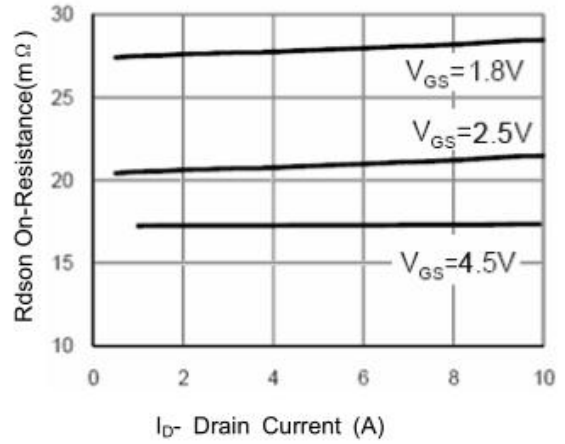


Figure 4: Rds(on)- Drain Current

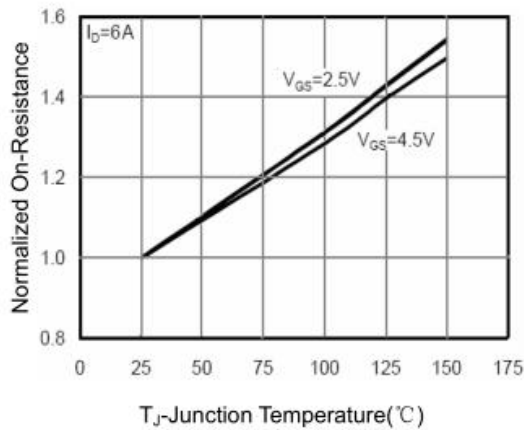


Figure 5: Rds(on)- Junction Temperature

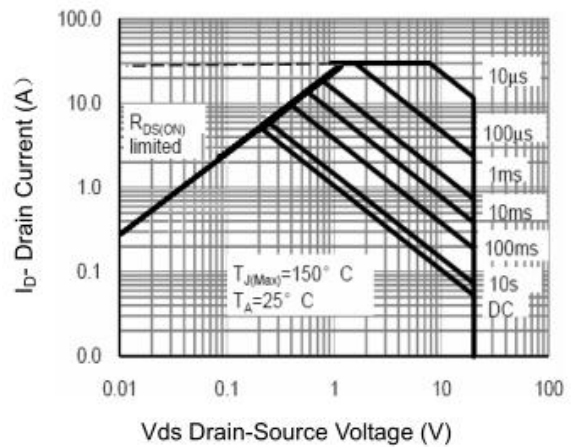


Figure 6: Safe Operation Area