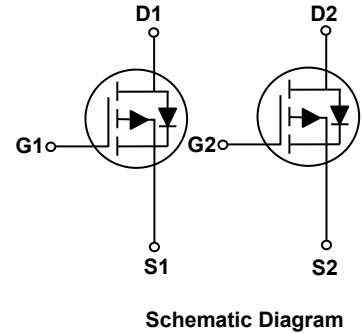
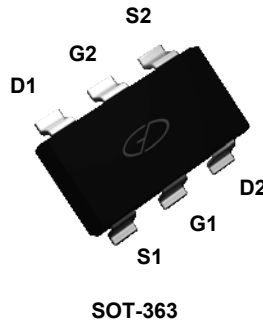


### Main Product Characteristics

$V_{DS}$	-50V
$R_{DS(ON)}$	10 $\Omega$
$I_D$	-130mA



### Features and Benefits

- Advanced MOSFET process technology
- Ideal for high efficiency switch mode power supplies
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery

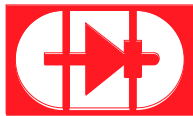


### Description

The GSFK0501 utilizes the latest techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supply and a wide variety of other applications.

### Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Max.	Unit
Drain-Source Voltage	$V_{DSS}$	-50	V
Gate-Source Voltage	$V_{GSS}$	$\pm 12$	V
Drain Current-Continuous <sup>1</sup>	$I_D$	-130	mA
Power Dissipation <sup>1</sup>	$P_D$	0.3	W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	417	$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	-55 To +150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55 To +150	$^{\circ}\text{C}$


**Electrical Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>On/Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-50	-	-	V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=-50V, V_{GS}=0V$	-	-	-1	$\mu A$
Gate-Body Leakage	$I_{GSS}$	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	$\pm 10$	nA
Static Drain-Source On-Resistance <sup>2</sup>	$R_{DS(ON)}$	$V_{GS}=-5V, I_D=-0.1A$	-	2.1	10	$\Omega$
Gate Threshold Voltage <sup>2</sup>	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=-1mA$	-0.8	-1.6	-2	V
<b>Dynamic and Switching Characteristics</b>						
Input Capacitance <sup>3</sup>	$C_{iss}$	$V_{GS}=0V, V_{DS}=-20V,$ $F=1MHz$	-	56	-	pF
Output Capacitance <sup>3</sup>	$C_{oss}$		-	17	-	
Reverse Transfer Capacitance <sup>3</sup>	$C_{rss}$		-	5	-	
Turn-On Delay Time <sup>3</sup>	$t_{d(on)}$	$V_{DD}=-30V, R_L=150\Omega$ $V_{GS}=-10V, I_D=-0.2A,$ $R_G=25\Omega$	-	6	-	nS
Turn-Off Delay Time <sup>3</sup>	$t_{d(off)}$		-	25	-	

Note:

1. Surface Mounted on FR4 Board,  $t \leq 10$  sec
2. Pulse test: pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
3. Guaranteed by design.

## Typical Electrical and Thermal Characteristic Curves

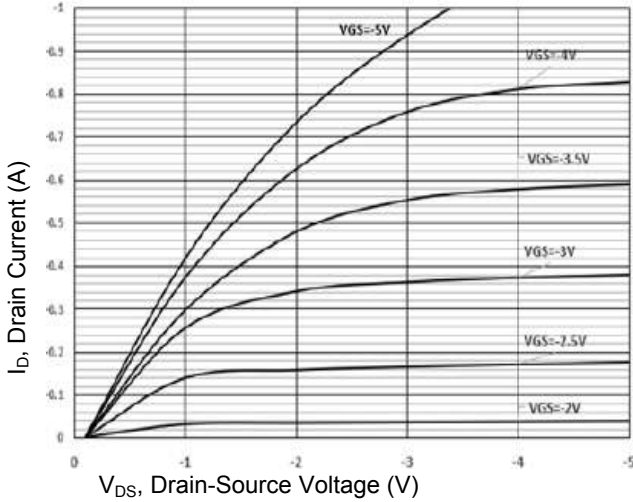


Figure 1. Output Characteristics

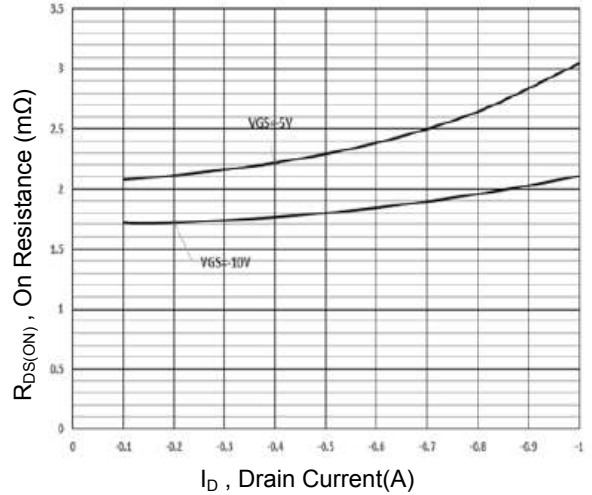


Figure 2. Drain-Source On Resistance

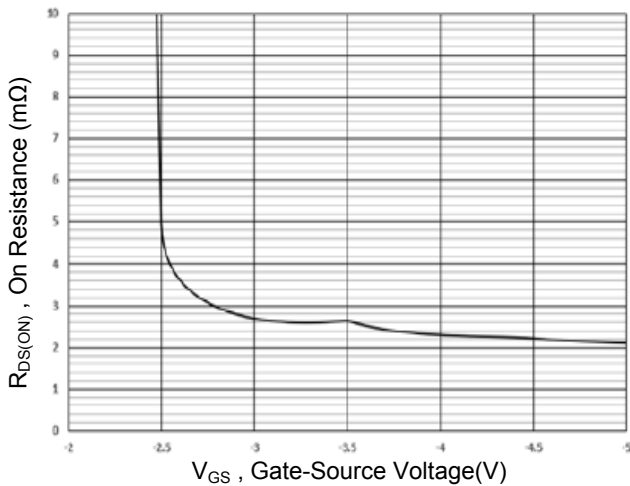


Figure 3. Drain-Source On Resistance

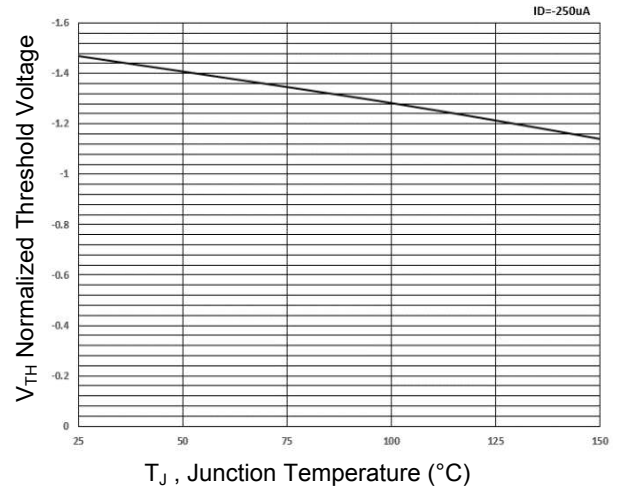


Figure 4. Gate Threshold Voltage

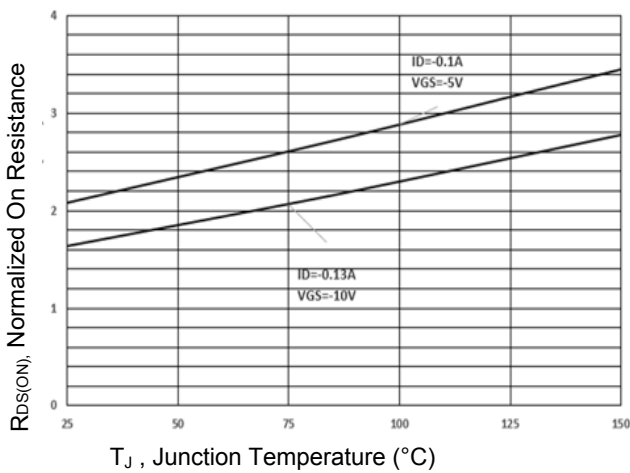


Figure 5. Drain-Source On Resistance

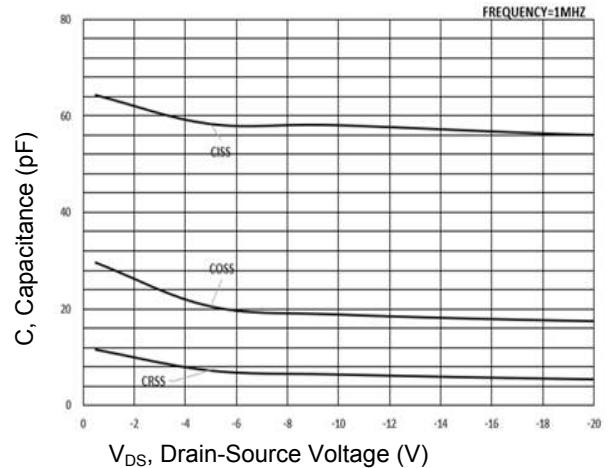
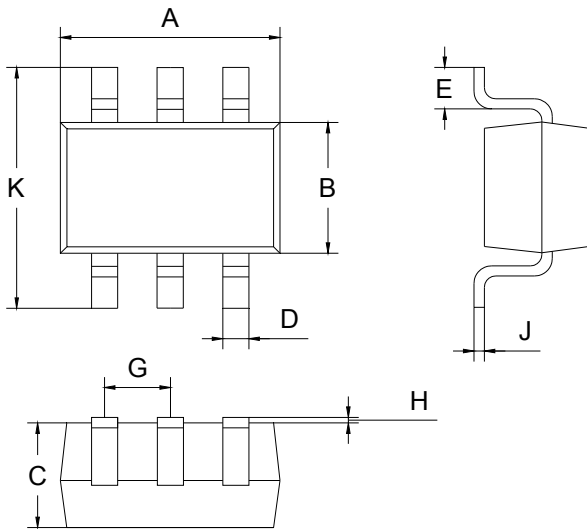


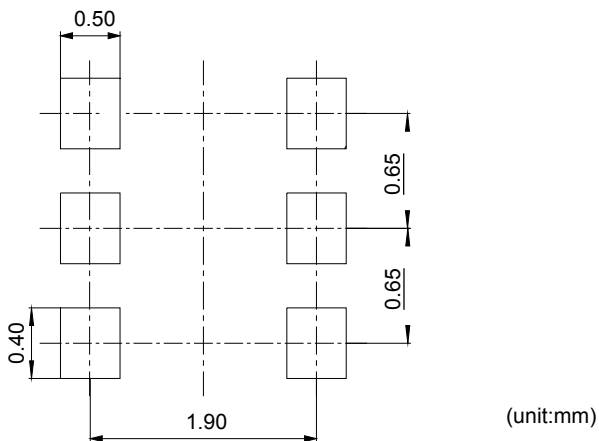
Figure 6. Capacitance

### Package Outline Dimensions (SOT-363)



SOT-363 (Unit:mm)		
Dim	M	Max
A	2.0	2.20
B	1.1	1.35
C	0.85	1.05
D	0.1	0.35
E	0.2	0.40
G	0.6	0.70
H	0.0	0.10
J	0.0	0.15
K	2.2	2.40

### Recommended Pad Layout



### Order Information

Device	Package	Marking Code	Carrier	Quantity	HSF Status
GSFK0501	SOT-363	K84	Tape & Reel	3,000/Reel	RoHS Compliant