GP ELECTRONICS

GP3134KB

20V N-Channel MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	161mΩ@4.5V	0.75A
	229mΩ@2.5V	
	340mΩ@1.8V	

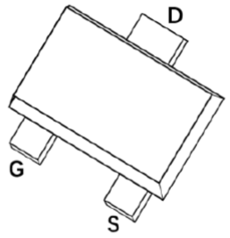
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- ESD Protect

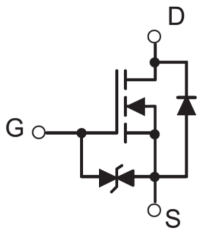
Application

- Load Switch
- DC/DC Converter

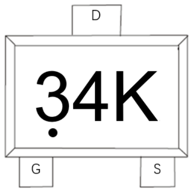
SOT-723



Schematic diagram



MARKING:



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current[1,5]	T_A = 25℃	I_D	0.75	A
Pulsed Drain Current[2]		I_{DM}	3.0	A
Power Dissipation[4,5]	T_A = 25℃	P_D	0.15	W
Thermal Resistance from Junction to Ambient[5]		$R_{\theta JA}$	833	°C/W
Junction Temperature		T_J	150	°C
Storage Temperature		T_{STG}	-55~ +150	°C

MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0V			1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS} = ±10V, V_{DS} = 0V			±5	μA
On Characteristics[3]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.4	0.7	1.0	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 0.3A		161	380	mΩ
		V_{GS} = 2.5V, I_D = 0.3A		229	450	
		V_{GS} = 1.8V, I_D = 0.3A		340	590	
Dynamic Characteristics[4]						
Input Capacitance	C_{iss}	V_{DS} = 10V, V_{GS} = 0V, f = 1MHz		29		pF
Output Capacitance	C_{oss}			5.4		
Reverse Transfer Capacitance	C_{rss}			5.3		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		9.6		Ω
Switching Characteristics[4]						
Total Gate Charge	Q_g	V_{DS} = 10V, V_{GS} = 4.5V, I_D = 1.0A		1.0		nC
Gate-Source Charge	Q_{gs}			0.3		
Gate-Drain Charge	Q_{gd}			0.3		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 10V, V_{GS} = 4.5V, I_D = 0.5A, R_G = 10Ω		6.7		ns
Turn-On Rise Time	t_r			4.8		
Turn-Off Delay Time	$t_{d(off)}$			17.3		
Turn-Off Fall Time	t_f			7.4		
Source-Drain Diode Characteristics						
Diode Forward Voltage[3]	V_{SD}	V_{GS} = 0V, I_S = 0.15A			1.2	V

Notes :

1.The maximum current rating is limited by package.

2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.

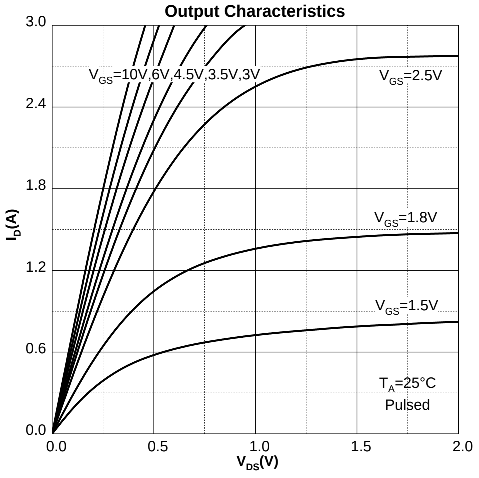
3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.

4.The power dissipation P_D is limited by $T_{J(MAX)}$ = 150°C.

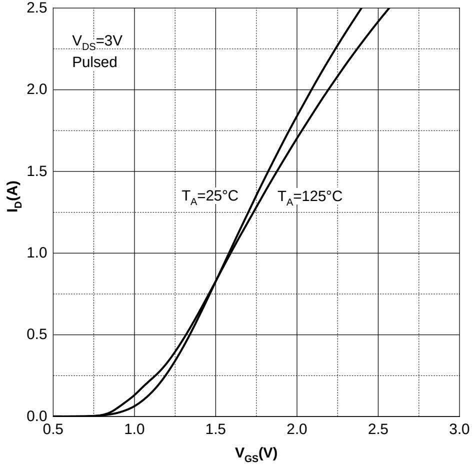
5.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C.

Typical Characteristics

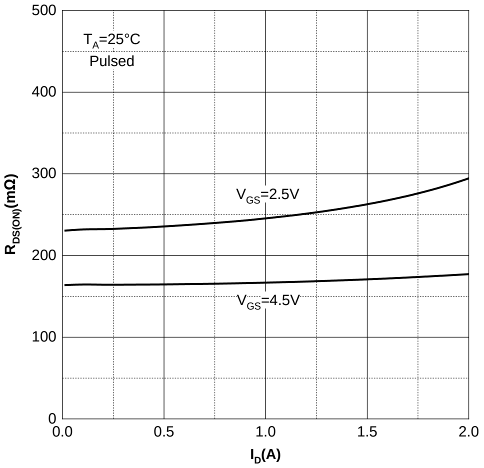
Output Characteristics



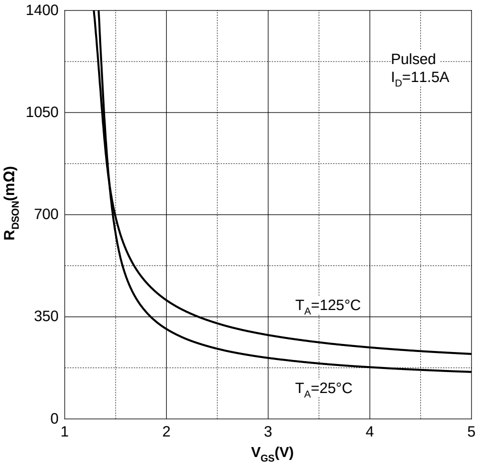
Transfer Characteristics



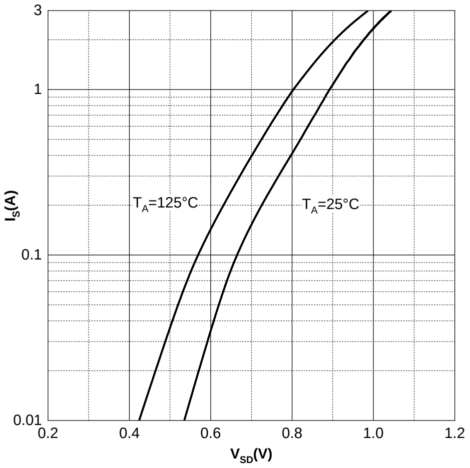
$R_{DS(ON)}$ vs I_D



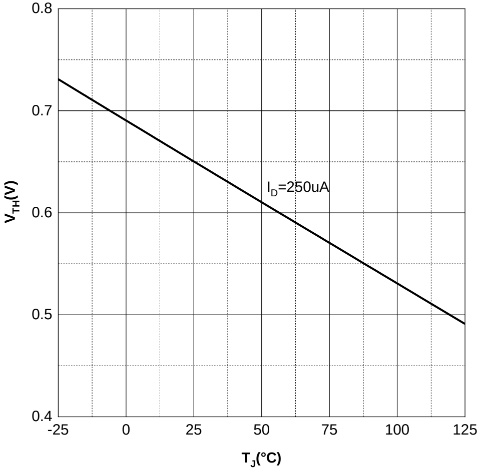
$R_{DS(ON)}$ vs V_{GS}



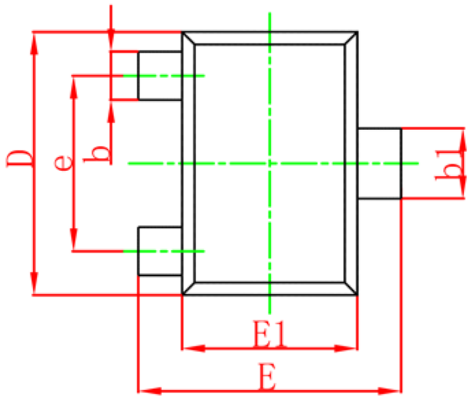
I_S vs V_{SD}

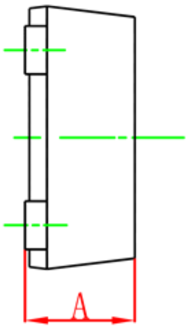


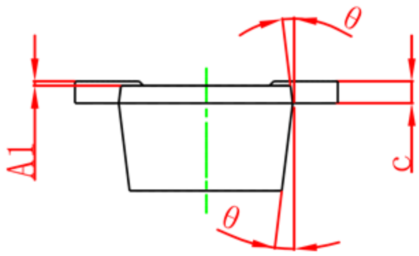
Threshold Voltage



SOT-723 Package Information







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.340	0.500	0.013	0.020
A1	0.000	0.050	0.000	0.002
b	0.150	0.270	0.006	0.011
b1	0.200	0.370	0.008	0.015
c	0.060	0.160	0.002	0.006
D	1.100	1.300	0.043	0.051
E	1.100	1.300	0.043	0.051
E1	0.700	0.900	0.028	0.035
e	0.8TYP		0.031TYP	
θ	8°REF		8°REF	

Attention：