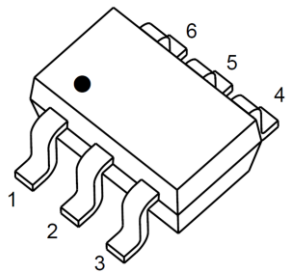
GP3541KDW

30V N-Channel MOSFET

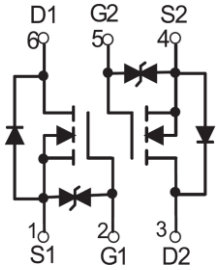
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	0.98Ω@4.5V	300mA
	1.1Ω@2.5V	

SOT-363



Schematic diagram



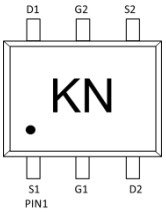
Feature

- Dual N-Channel MOSFET
- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed
- Small Surface Mount Package

APPLICATION

- DC-DC Converters
- Power management functions
- Battery Operated Systems and Solid-State Relays
- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories, Transistors, etc

MARKING:



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current[1]	I_D	300	mA
Total Power Dissipation[1]	P_D	310	mW
Thermal Resistance from Junction to Ambient[1]	$R_{\theta JA}$	411	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

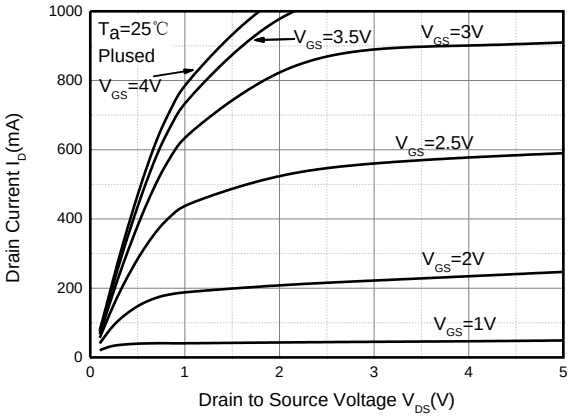
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics[2]						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =50V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±10	μA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.6	0.9	1.5	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =4.5V, I_D =10mA		0.98	3.0	Ω
		V_{GS} =2.5V, I_D =1mA		1.2	4.5	
Forward tranconductance	g_{FS}	V_{DS} =3V, I_D =10mA		100		mS
Diode Forward voltage	V_{DS}	I_S=350mA, V_{GS} = 0V		1.0	1.2	V
Dynamic characteristics[3]						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V,f=1MHz		47		pF
Output Capacitance	C_{oss}			5.5		
Reverse Transfer Capacitance	C_{rss}			4.5		
Total Gate Charge	Q_g	V_{GS} = 4.5V, V_{DS} = 10V,I_D = 250mA		0.8		nC
Gate-Source Charge	Q_{gs}			0.4		
Gate-Drain Charge	Q_{gd}			0.2		
Turn-on delay time	$t_{d(on)}$	V_{DD} = 30V, V_{GS} = 10V, R_G = 25Ω, I_D = 200mA		2.9		ns
Turn-on rise time	t_r			2.7		
Turn-off delay time	$t_{d(off)}$			20		
Turn-off fall time	t_f			12		

Notes:

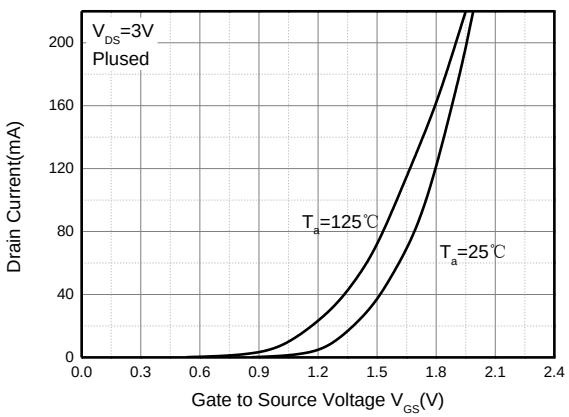
1. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
2. Short duration pulse test used to minimize self-heating effect.
3. Guaranteed by design. Not subject to product testing.

Typical Electrical and Thermal Characteristic

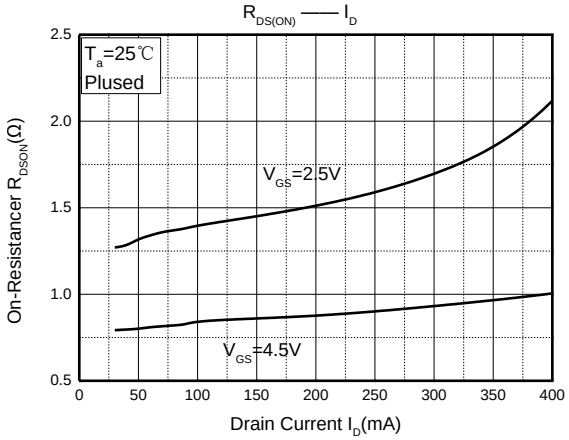
Output Characteristics



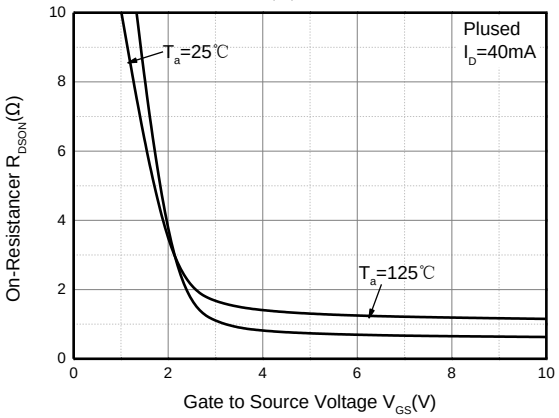
Transfer Characteristics



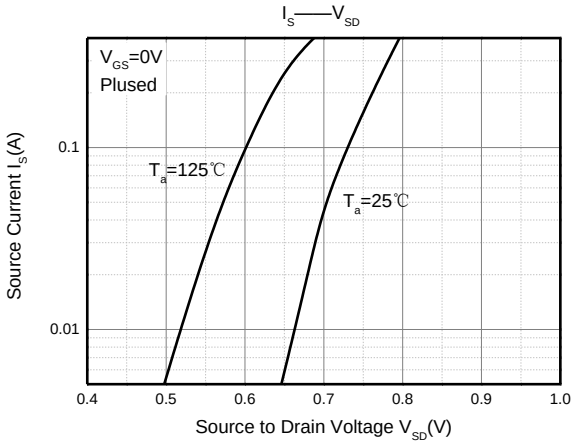
RDS(ON) —— ID



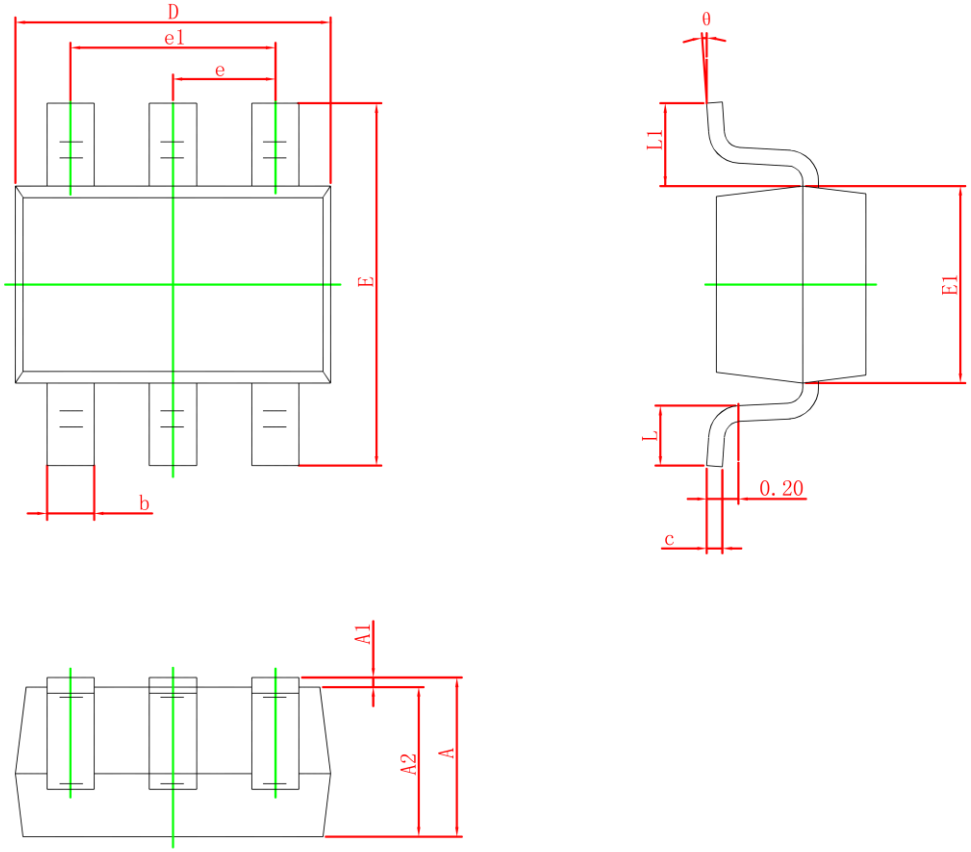
RDS(ON) —— VGS



IS——VSD



SOT-363 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A1	0	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	1.800	2.200	0.071	0.087
E	2.000	2.450	0.079	0.096
E1	1.150	1.350	0.045	0.053
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L1	0.525REF		0.021REF	
L	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°