

Product Summary

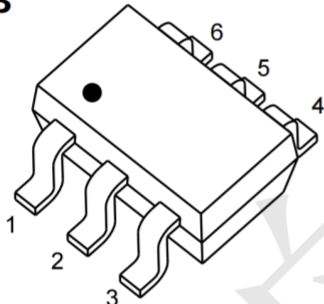
- V_{DS} 50 V
- I_{DS} 0.36A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) $<2\Omega$
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) $<2.5\Omega$

Application

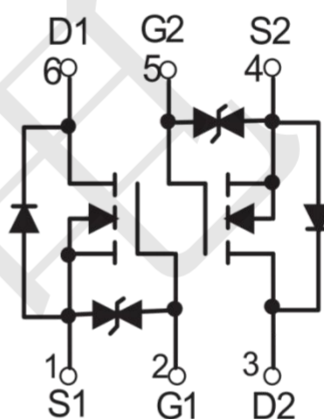
- Reverse Battery protection
- Load switch
- Power management
- Motor Control

Package and Pin Configuration

SOT363



Circuit diagram



Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	50	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.36	A
Pulsed Drain Current (tp = 10μs)	I_{DM}	1.5	A
Total Power Dissipation	P_{DTOT}	0.35	W
Operating Junction Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C

Thermal Characteristic

PARAMETER	Symbol	Value	Unit
Junction-to-Ambient Thermal Resistance	R_{thJA}	833	°C/W

Note : When mounted on 1" square PCB (FR4 material).

Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = 250μA	BV _{DSS}	50	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = 250μA	V _{GS(th)}	0.8	1.0	1.5	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±10V	I _{GSS}	--	--	±10	μA
Zero Gate Voltage Drain Current	V _{DS} = 20V, V _{GS} =0V	I _{DSS}	--	--	1	μA
	V _{DS} = 20V, T _J =125°C		--	--	50	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = 10V, I _D = 0.5A	R _{DS(on)}	--	1.5	2.0	Ω
	V _{GS} = 4.5V, I _D = 0.2A		--	1.7	2.5	
	V _{GS} = 2.5V, I _D = 0.1A		--	2.0	4.5	
Forward Transconductance (Note 2)	V _{DS} = 10V, I _D = 0.5A	g _{fs}	--	16	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	V _{DS} = 25V, I _D = 0.2A, V _{GS} = 10V	Q _g	--	4	--	nC
Gate-Source Charge (Note 3)		Q _{gs}	--	0.5	--	
Gate-Drain Charge (Note 3)		Q _{gd}	--	0.4	--	
Input Capacitance	V _{DS} = 25V, V _{GS} = 0V, F= 1.0MHz	C _{iss}	--	32	--	pF
Output Capacitance		C _{oss}	--	6	--	
Reverse Transfer Capacitance		C _{rss}	--	3	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DS} = 25V, I _D = 0.2A, V _{GS} = 10V, R _{GEN} = 6Ω	t _{d(on)}	--	2.2	--	nS
Rise Time (Note 3)		t _r	--	19.2	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	6.2	--	
Fall Time (Note 3)		t _f	--	23	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _F = 0.2A	V _{SD}	--	0.8	1.2	V

Notes:

1. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

TYPICAL CHARACTERISTICS

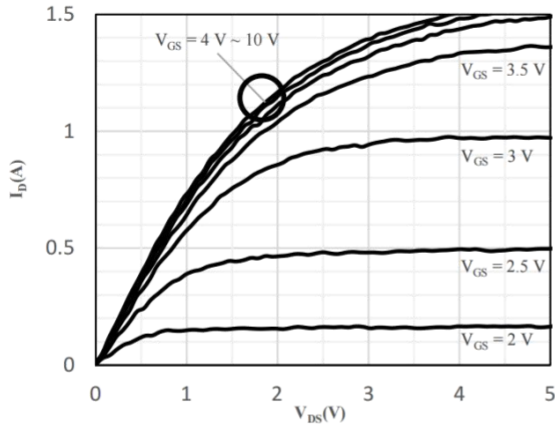


Fig 1 Typical Output Characteristics

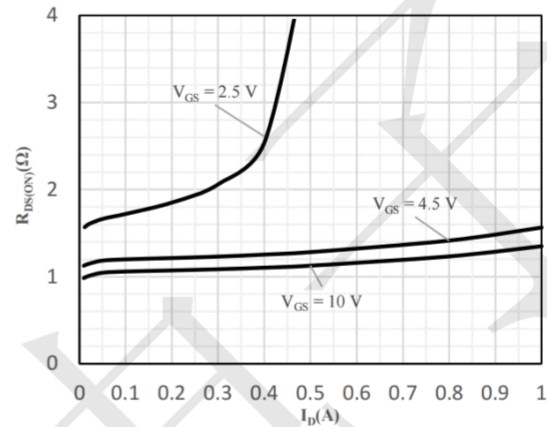


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

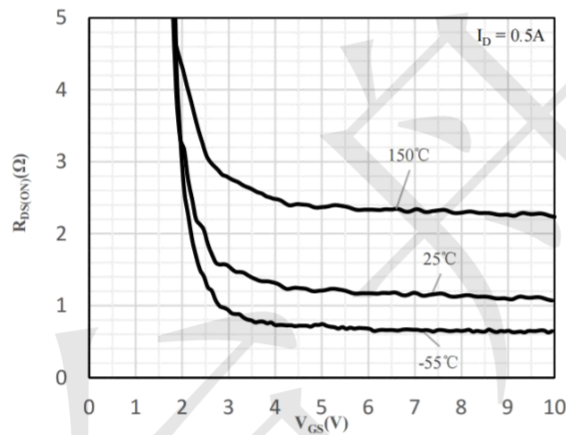


Fig 3 On-Resistance vs. Gate-Source Voltage

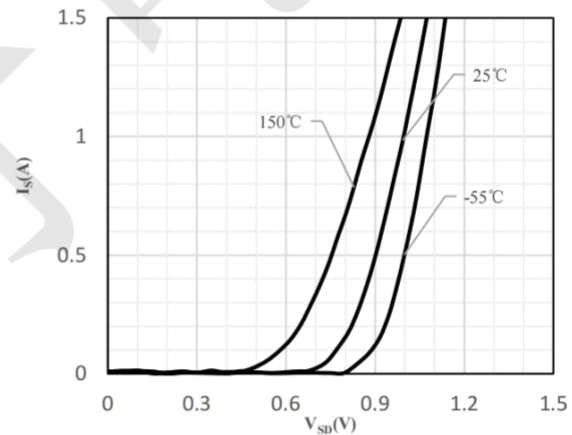


Fig 4 Body-Diode Characteristics

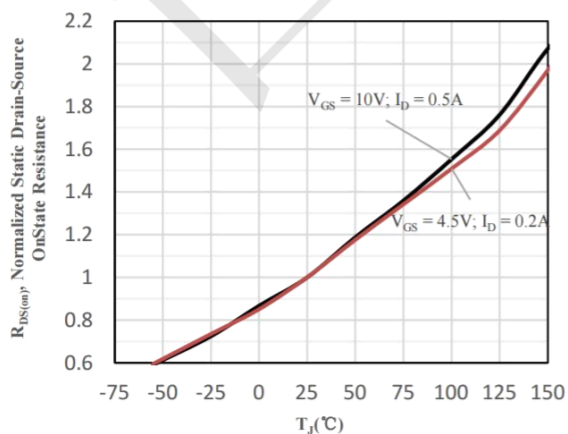


Fig 5 Normalized On-Resistance vs. Junction

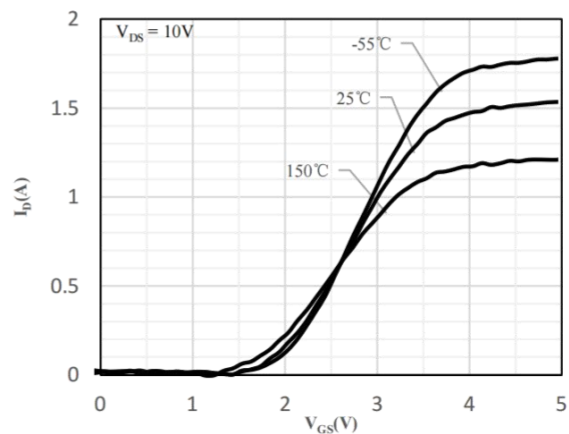
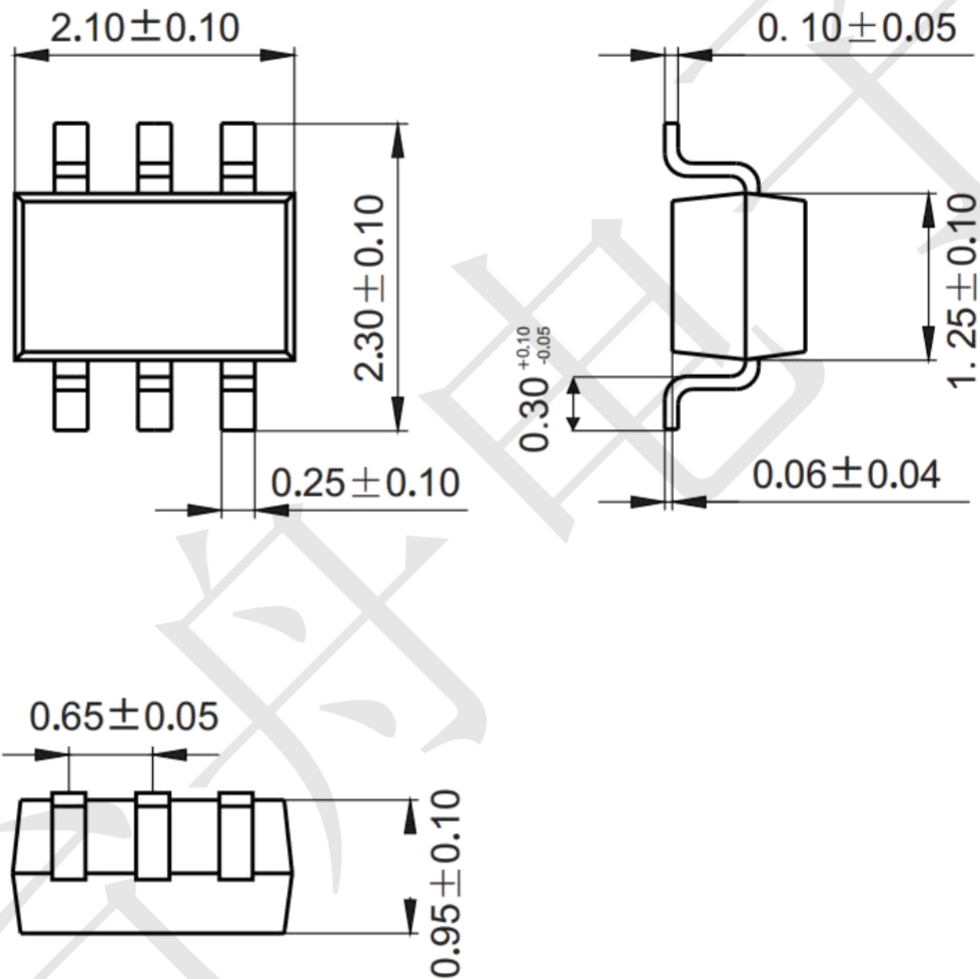


Fig 6 Transfer Characteristics

Package Outline & Dimensions (unit: mm)

SOT-363



Mounting Pad Layout (unit: mm)

