

Features

- Advanced high cell density Trench technology
- Super Low Gate Charge
- Excellent CdV/dt effect decline
- Green Device Available

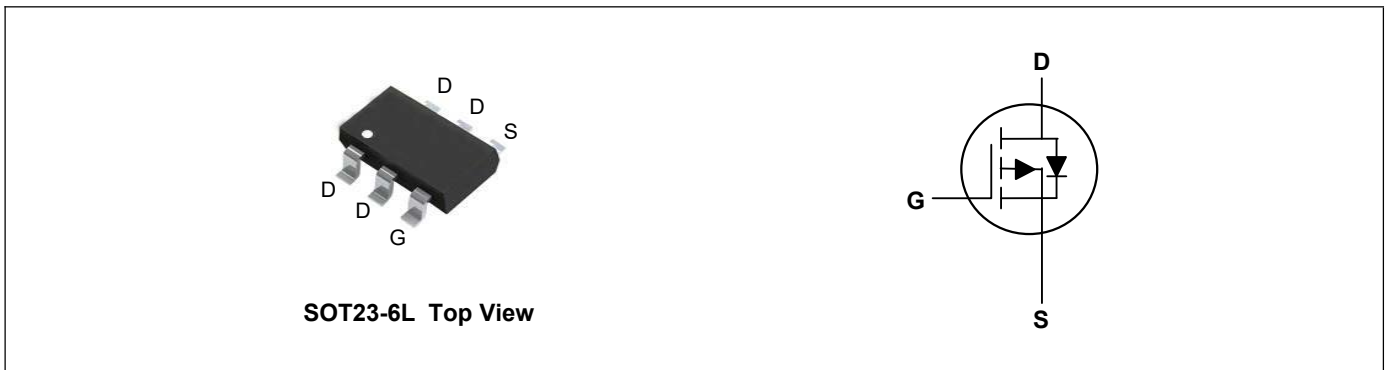
Product Summary



V_{DS}	-100	V
I_D	-1.5	A
$R_{DS(ON)}$ (at $V_{GS}=-10V$)	380	m Ω
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	450	m Ω

Applications

- High Frequency Point-of-Load, Synchronous Buck Converter
- Networking DC-DC Power System
- Load Switch



Absolute Maximum Ratings($T_A=25^{\circ}C$, unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹	I_D	-1.5	A
Pulsed Drain Current ²	I_{DM}	-6	A
Total Power Dissipation ⁴	$P_D@T_A=25^{\circ}C$	1.8	W
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}C$
Operating Junction Temperature Range	T_J	-55 to 150	$^{\circ}C$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance Junction-Ambient ¹	$R_{\theta JA}$	---	68	$^{\circ}C/W$

Electrical Characteristics (T_J=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250uA	-100	---	---	V
Static Drain-Source On-Resistance ²	R _{DS(ON)}	V _{GS} =-10V, I _D =-1.5A	---	280	380	mΩ
		V _{GS} =-4.5V, I _D =-1A	---	320	450	mΩ
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =-250uA	-1.0	---	-2.5	V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-80V, V _{GS} =0V	---	---	-1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
Forward Transconductance	g _{fs}	V _{DS} =-10V, I _D =-1.5A	---	5	---	S
Gate Resistance	R _g	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	10	---	Ω
Total Gate Charge	Q _g	V _{DS} =-50V, V _{GS} =-10V, I _D =-1.5A	---	19	---	nC
Gate-Source Charge	Q _{gs}		---	3	---	
Gate-Drain Charge	Q _{gd}		---	2.8	---	
Turn-On Delay Time	T _{d(on)}	V _{DS} =-50V, V _{GS} =-10V, R _G =1Ω, I _D =-1.5A	---	7.5	---	ns
Rise Time	T _r		---	16	---	
Turn-Off Delay Time	T _{d(off)}		---	48	---	
Fall Time	T _f		---	16	---	
Input Capacitance	C _{iss}	V _{DS} =-50V, V _{GS} =0V, f=1MHz	---	620	---	pF
Output Capacitance	C _{oss}		---	27	---	
Reverse Transfer Capacitance	C _{rss}		---	24	---	

Drain-Source Diode Characteristics

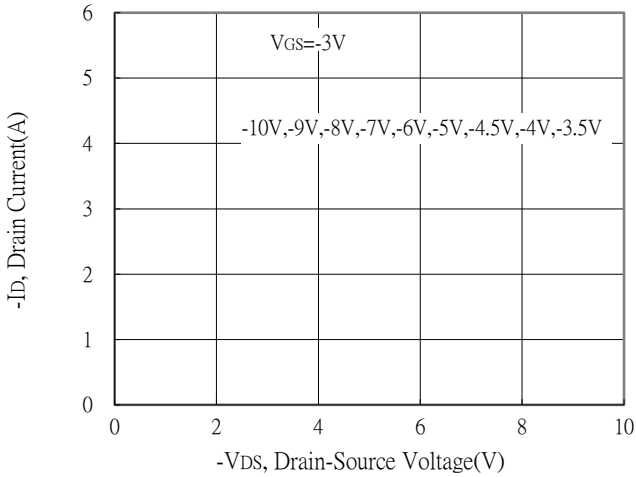
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Continuous Source Current ¹	I _S		---	---	-1.5	A
Diode Forward Voltage ²	V _{SD}	V _{GS} =0V, I _S =-1.5A, T _J =25°C	---	---	-1.2	V
Reverse Recovery Time	t _{rr}	I _F =-1.5A, di/dt=100A/μs, T _J =25°C	---	21	---	nS
Reverse Recovery Charge	Q _{rr}		---	17	---	nC

Note:

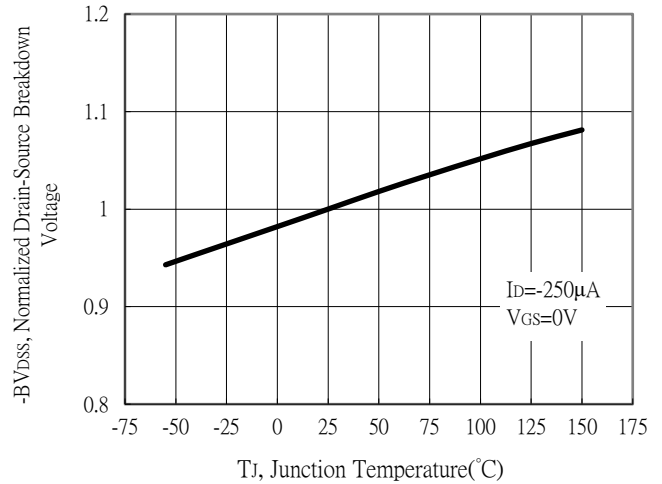
1. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
2. The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%
3. The power dissipation is limited by 150°C junction temperature

Typical Characteristics

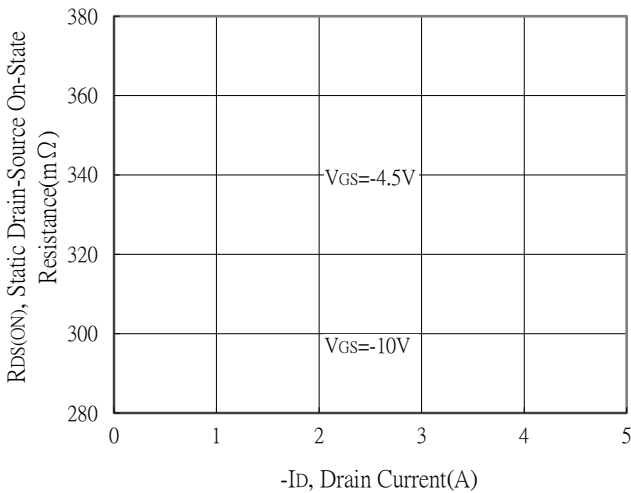
Typical Output Characteristics



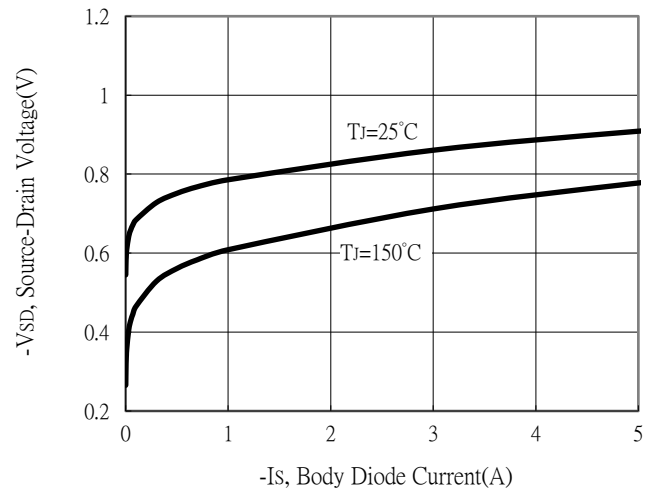
Breakdown Voltage vs Ambient Temperature



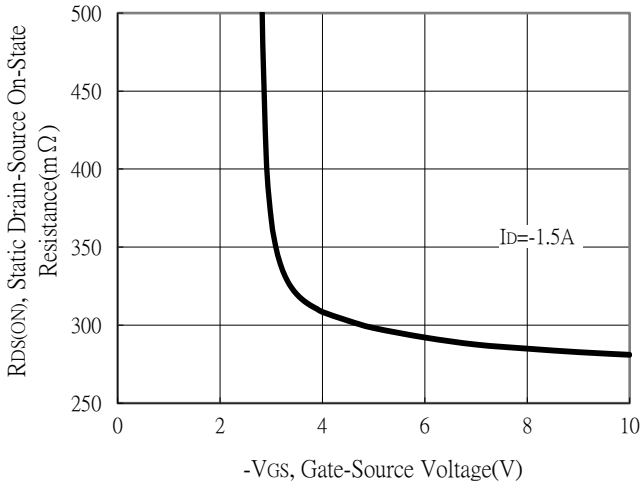
Static Drain-Source On-State resistance vs Drain Current



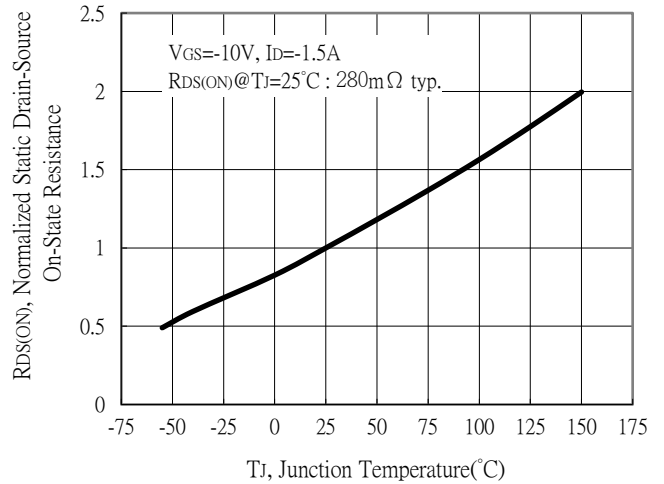
Body Diode Current vs Source-Drain Voltage



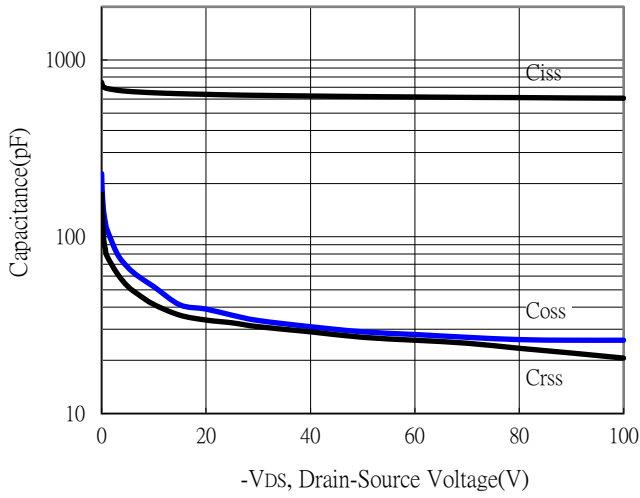
Static Drain-Source On-State Resistance vs Gate-Source Voltage



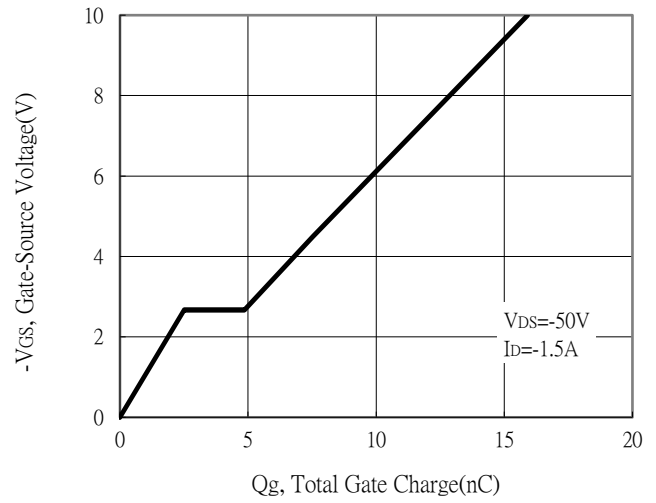
Drain-Source On-State Resistance vs Junction Temperature



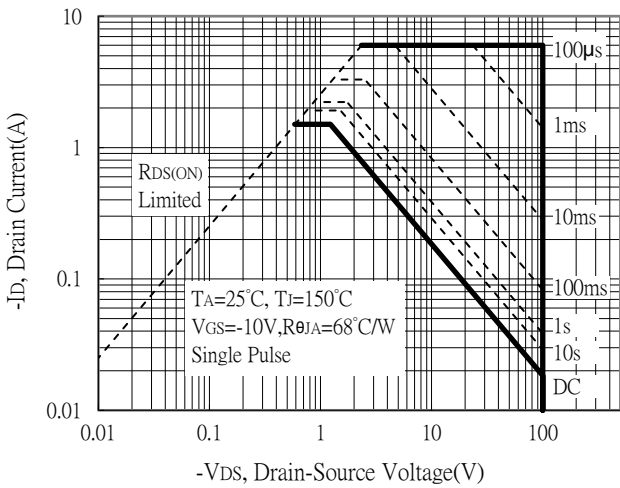
Capacitance vs Drain-to-Source Voltage



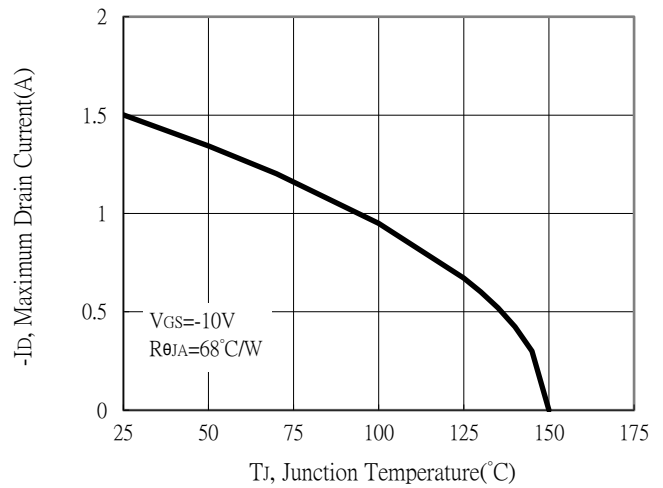
Gate Charge Characteristics



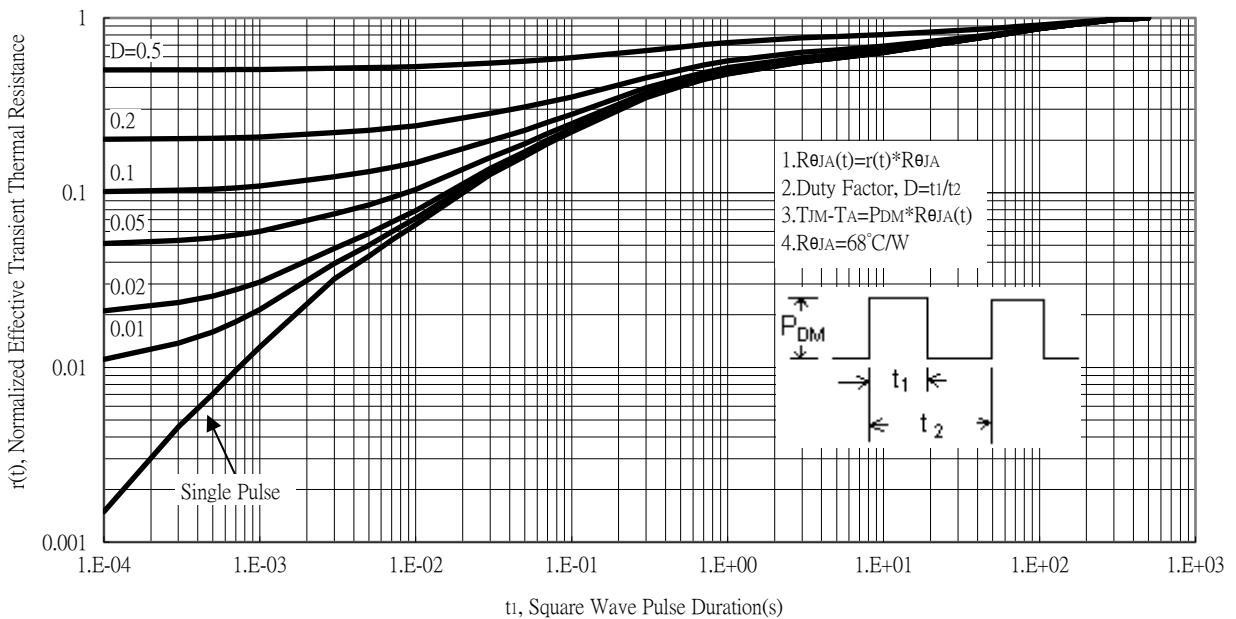
Maximum Safe Operating Area



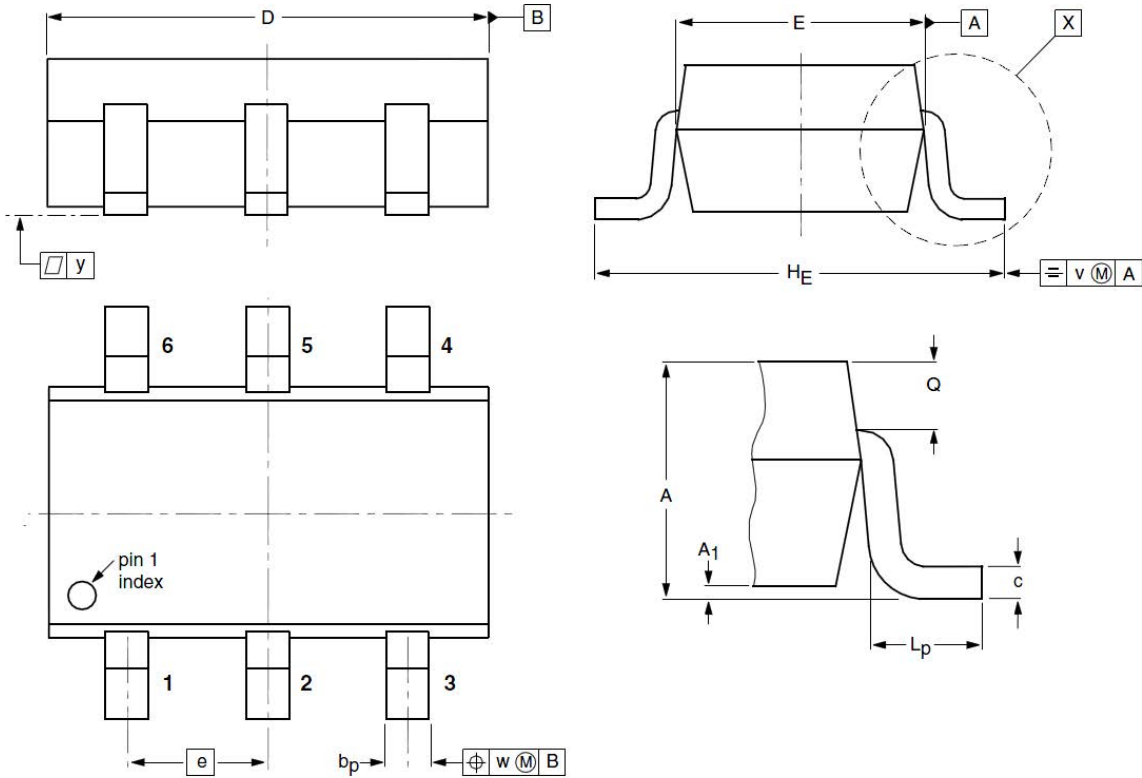
Maximum Drain Current vs Junction Temperature



Transient Thermal Response Curves



SOT23-6L Package Outline Dimensions



Symbol	Dimensions (unit:mm)			Symbol	Dimensions (unit:mm)		
	Min	Typ	Max		Min	Typ	Max
A	0.90	1.07	1.45	A₁	0.01	0.05	0.15
b_p	0.30	0.40	0.50	c	0.10	0.15	0.22
D	2.70	2.92	3.10	E	1.35	1.55	1.75
e	--	0.95	--	H_E	2.50	2.80	3.00
L_p	0.30	0.45	0.60	Q	0.23	0.29	0.33
v	--	0.20	--	W	--	0.20	--
y	--	0.10	--				