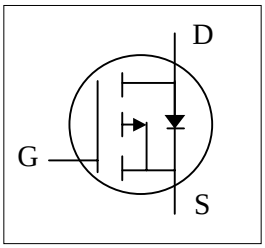
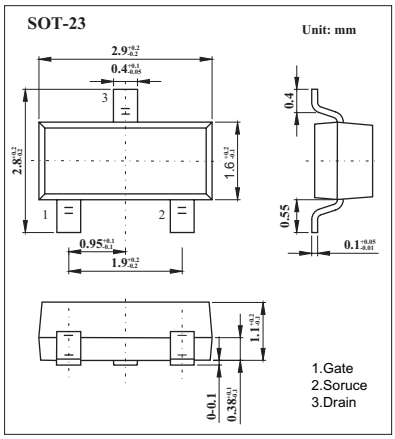
SI2337DS-T1-GE3

Product specification

P-CHANNEL MOSFET FOR SWITCHING

BV_{DSS}	-100V
$R_{DS(ON)}$	0.9Ω
I_D	- 1.0A





Absolute Maximum Ratings@T_j=25°C(unless otherwise specified)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_A=25℃	Drain Current , V_{GS} @ 10V	-1.0	A
I_D@T_A=70℃	Drain Current , V_{GS} @ 10V	-0.95	A
I_{DM}	Pulsed Drain Current	-4.8	A
P_D@T_A=25℃	Total Power Dissipation	1.38	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Value	Unit
Rthj-amb	Maximum Thermal Resistance, Junction-ambient	90	℃/W

Marking	E7***

Electrical Characteristics@T_j=25°C(unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250uA	-100	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-1A	-	-	0.85	Ω
		V_{GS}=-4.5V, I_D=-0.5A	-	-	0.9	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250uA	-1	-	-3	V
g_{fs}	Forward Transconductance	V_{DS}=-10V, I_D=-1A	-	3.3	-	S
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-80V, V_{GS}=0V	-	-	-25	uA
I_{GSS}	Gate-Source Leakage	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Q_g	Total Gate Charge	I_D=-1A	-	10.5	17	nC
Q_{gs}	Gate-Source Charge	V_{DS}=-50V	-	1.5	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	V_{GS}=-10V	-	2.5	-	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=-50V	-	7	-	ns
t_r	Rise Time	I_D=-1A	-	5	-	ns
$t_{d(off)}$	Turn-off Delay Time	R_G=3.3Ω	-	17	-	ns
t_f	Fall Time	V_{GS}=-10V	-	5	-	ns
C_{iss}	Input Capacitance	V_{GS}=0V	-	420	670	pF
C_{oss}	Output Capacitance	V_{DS}=-50V	-	35	-	pF
C_{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	25	-	pF

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage	I_S=-1A, V_{GS}=0V	-	-	-1.3	V
t_{rr}	Reverse Recovery Time	I_S=-1A, V_{GS}=0V,	-	37	-	ns
Q_{rr}	Reverse Recovery Charge	dI/dt=100A/μs	-	27	-	nC

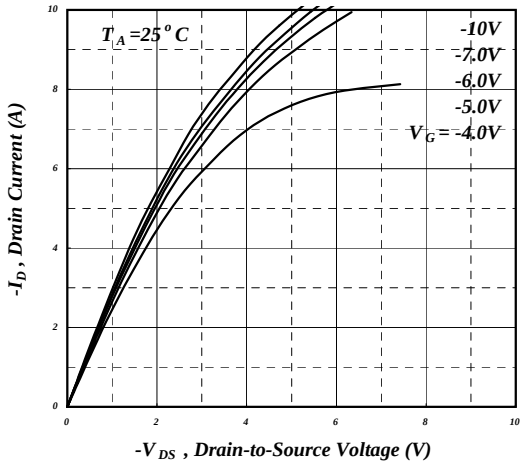


Fig 1. Typical Output Characteristics

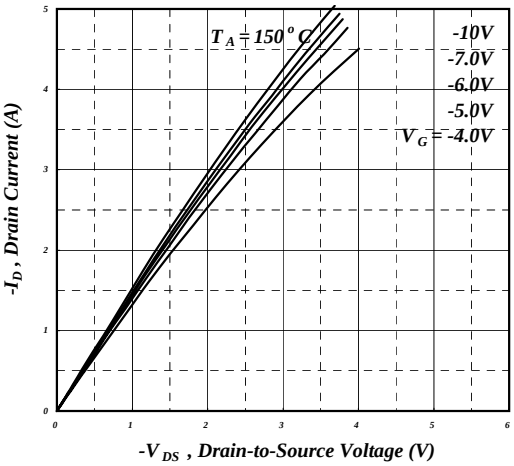


Fig 2. Typical Output Characteristics

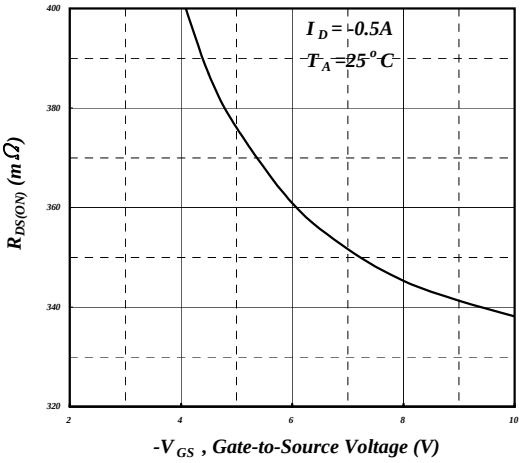


Fig 3. On-Resistance v.s. Gate Voltage

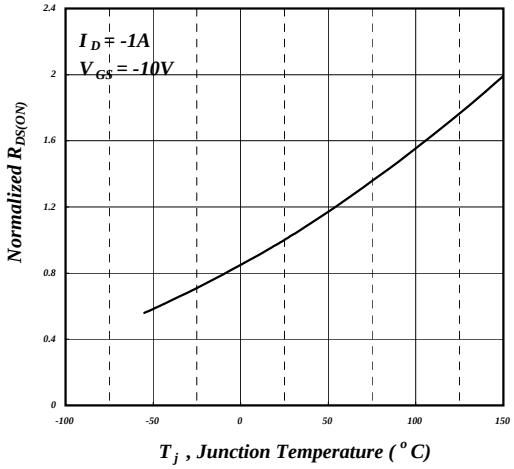


Fig 4. Normalized On-Resistance v.s. Junction Temperature

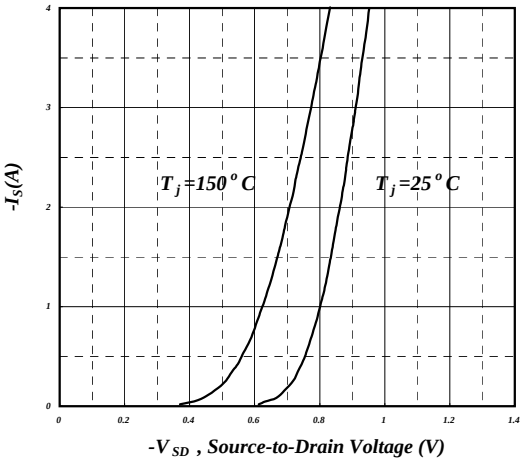


Fig 5. Forward Characteristic of Reverse Diode

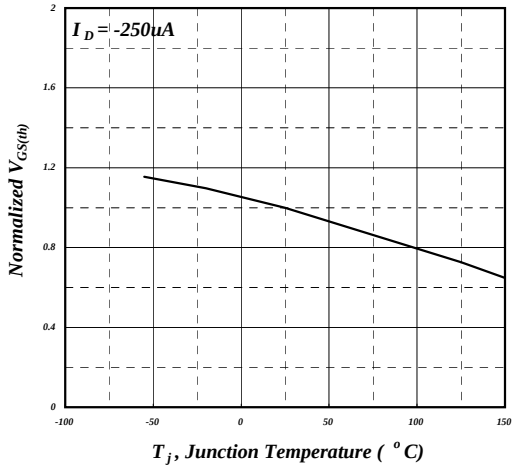


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

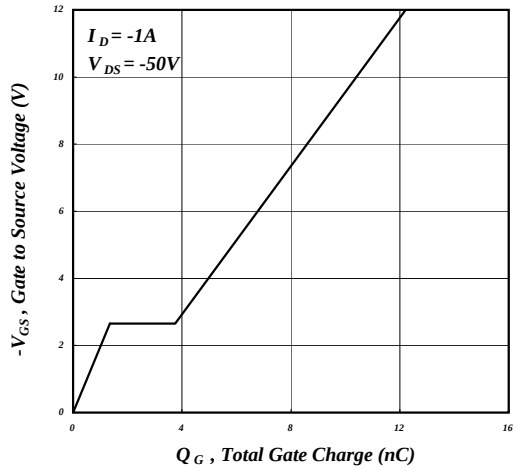


Fig 7. Gate Charge Characteristics

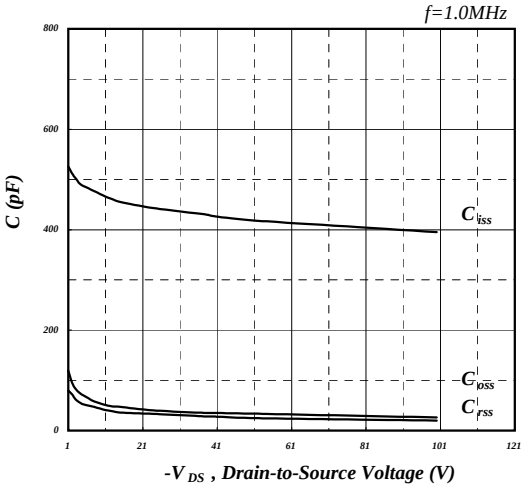


Fig 8. Typical Capacitance Characteristics

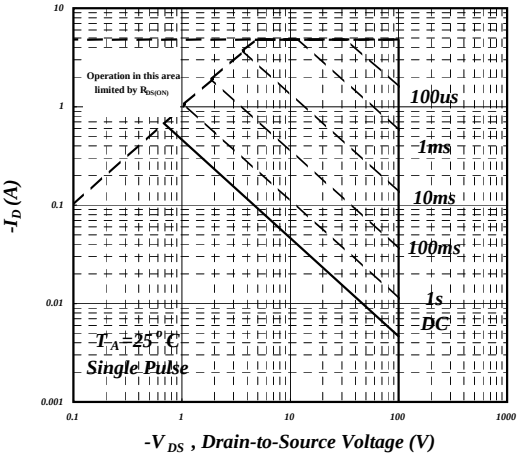


Fig 9. Maximum Safe Operating Area

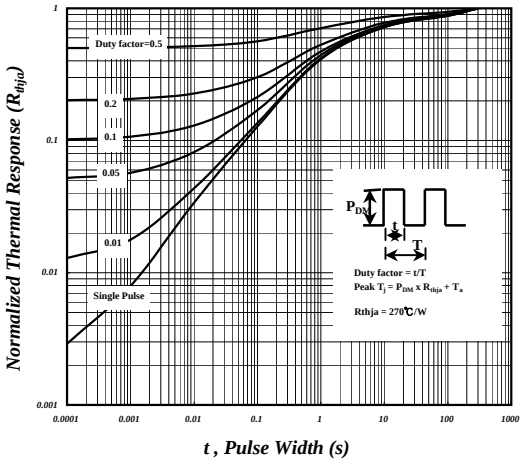


Fig 10. Effective Transient Thermal Impedance

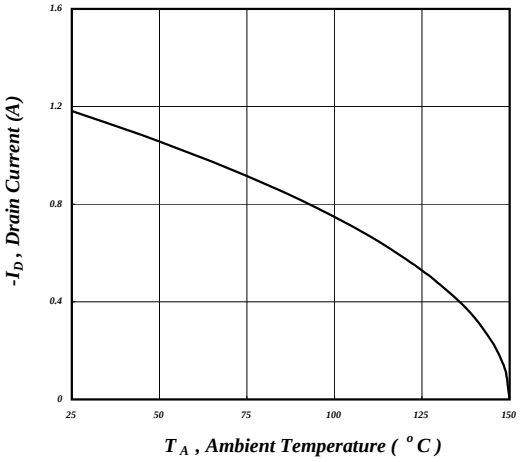


Fig 11. Drain Current v.s. Ambient Temperature

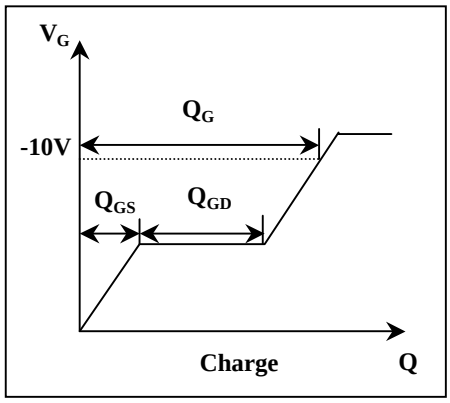


Fig 12. Gate Charge Waveform

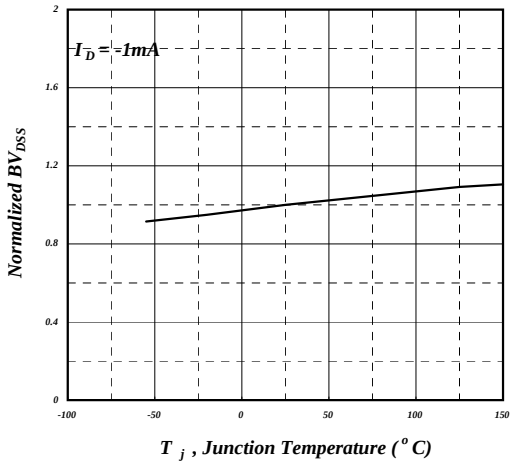


Fig 13. Normalized BV_{DSS} v.s. Junction Temperature

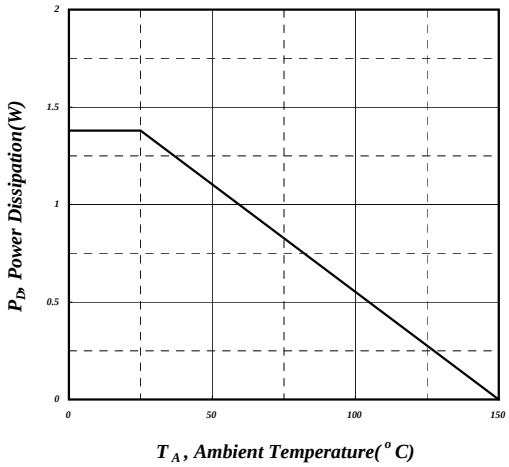


Fig 14. Total Power Dissipation

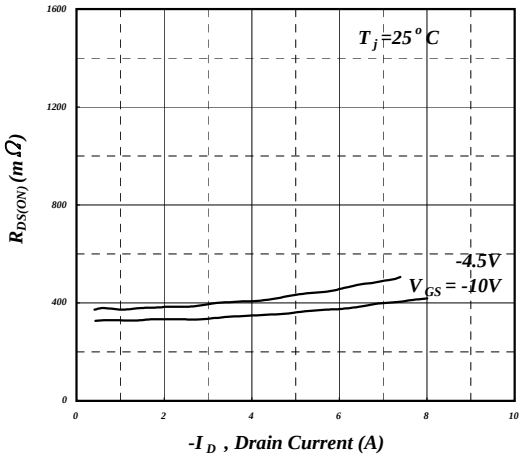


Fig 15. Typ. Drain-Source on State Resistance

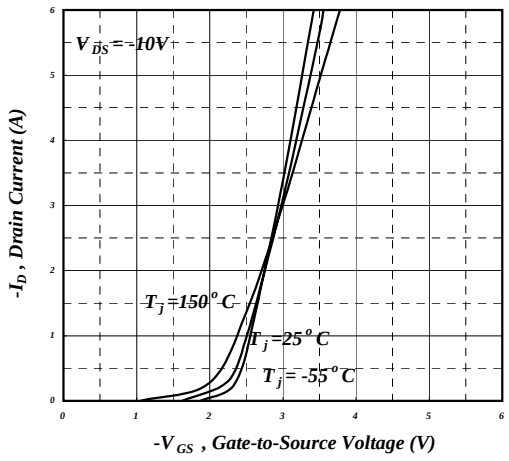


Fig 16. Transfer Characteristics