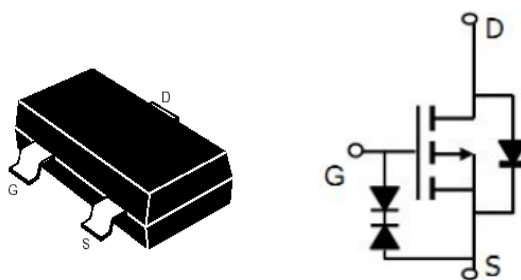


Features

$V_{DS} = -20V$
 $I_D = -4.8A$
 $R_{DS(ON)} @ V_{GS} = -4.5V, TYP = 45m\Omega$
 $R_{DS(ON)} @ V_{GS} = -2.5V, TYP = 65m\Omega$

Pin Configurations



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

Symbol	Parameter	Rating	Unit	
Common Ratings (TA=25°C Unless Otherwise Noted)				
V _{GS}	Gate-Source Voltage	±8	V	
V _{(BR)DSS}	Drain-Source Breakdown Voltage	-20	V	
T _J	Maximum Junction Temperature	150	°C	
T _{STG}	Storage Temperature Range	-50 to 150	°C	
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested①	T _A =25°C	-30	A
I _D	Continuous Drain Current	T _A =25°C	-4.8	A
		T _A =70°C	-3.6	
P _D	Maximum Power Dissipation	T _A =25°C	1.5	W
		T _A =70°C	1.0	
R _{θJA}	Thermal Resistance Junction-Ambient	80	°C/W	

Electrical Characteristics (TA=25°C unless otherwise specified)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =-250μA	-20	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current(T _A =25°C)	V _{DS} =-20V, V _{GS} =0V	--	--	-1	μA
	Zero Gate Voltage Drain Current(T _A =125°C)	V _{DS} =-16V, V _{GS} =0V	--	--	-100	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±8V, V _{DS} =0V	--	--	±10	μA
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-0.7	-1.2	V
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =-4.5V, I _D =-4A	--	37	45	mΩ
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =-3.3V, I _D =-3A	--	43	55	mΩ
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =-2.5V, I _D =-2A	--	52	65	mΩ
Dynamic Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
C _{iss}	Input Capacitance	V _{DS} =-10V, V _{GS} =0V, f=1MHz	--	675	--	pF
C _{oss}	Output Capacitance		--	120	--	pF
C _{rss}	Reverse Transfer Capacitance		--	85	--	pF
Q _g	Total Gate Charge	V _{DS} =-10V I _D =-4A, V _{GS} =-4.5V	--	14.2	--	nC
Q _{gs}	Gate Source Charge		--	3.2	--	nC
Q _{gd}	Gate Drain Charge		--	5.8	--	nC
Switching Characteristics						
t _{d(on)}	Turn on Delay Time	V _{DD} =-10V, I _D =-2A, R _G =3.3Ω, V _{GS} =-4.5V	--	15	--	ns
t _r	Turn on Rise Time		--	11	--	ns
t _{d(off)}	Turn Off Delay Time		-	22	--	ns
t _f	Turn Off Fall Time		--	35	--	ns
Source Drain Diode Characteristics						
I _{SD}	Source drain current(Body Diode)	T _A =25°C	--	--	-2	A
V _{SD}	Forward on voltage②	T _j =25°C, I _{SD} =-2A, V _{GS} =0V	--	-0.83	-1.2	V

Notes: ① Pulse width limited by maximum allowable junction temperature

②Pulse test ; Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

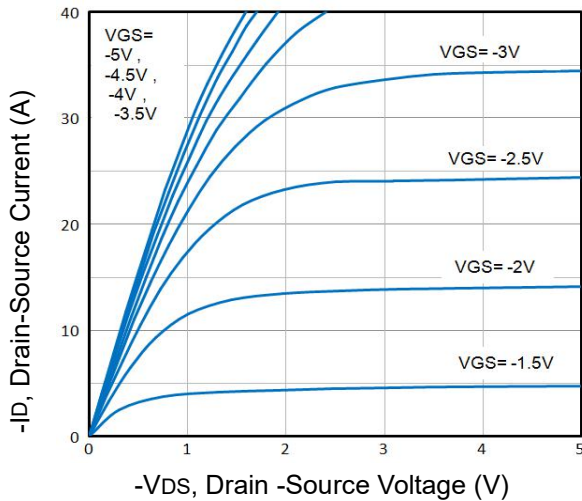


Fig1. Typical Output Characteristics

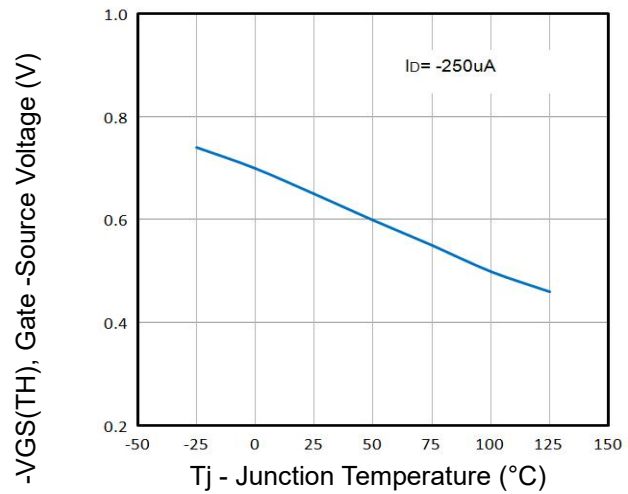


Fig2. Normalized Threshold Voltage Vs. Temperature
 T_j - Junction Temperature ($^\circ\text{C}$)
 T_c , Case Temperature ($^\circ\text{C}$)

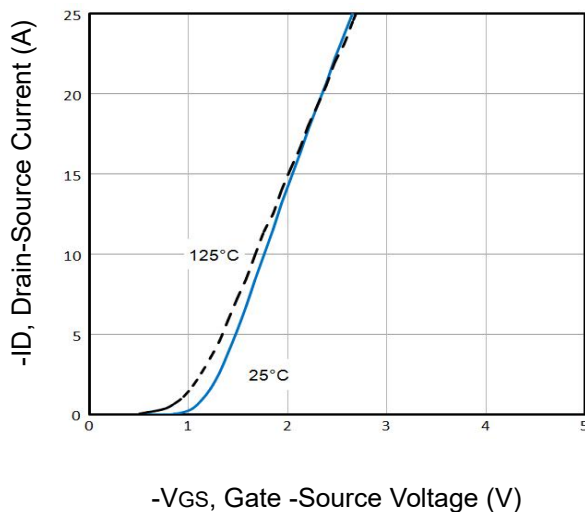


Fig3. Typical Transfer Characteristics

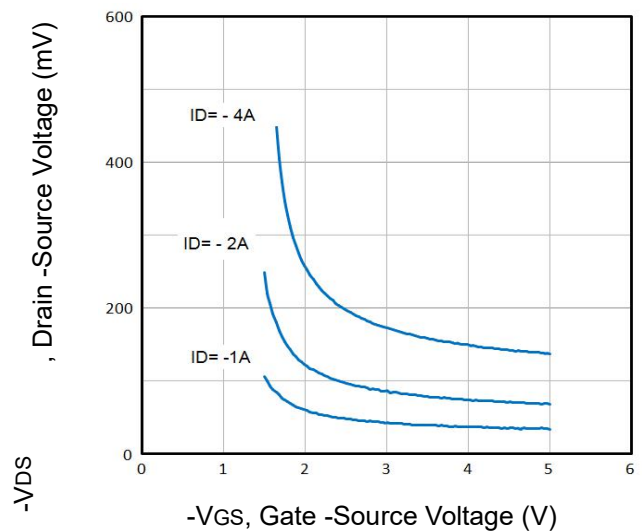


Fig4. Drain-Source Voltage vs Gate-Source Voltage

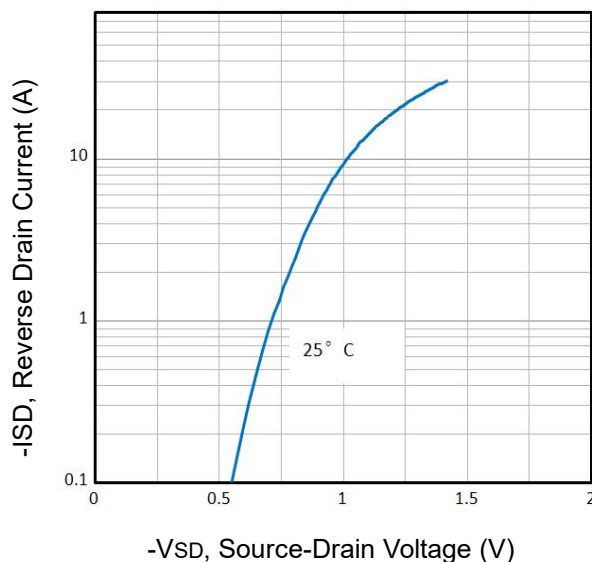


Fig5. Typical Source-Drain Diode Forward Voltage

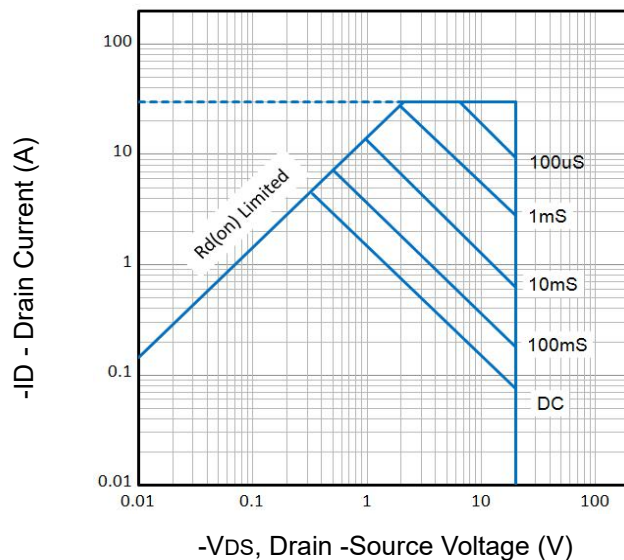


Fig6. Maximum Safe Operating Area

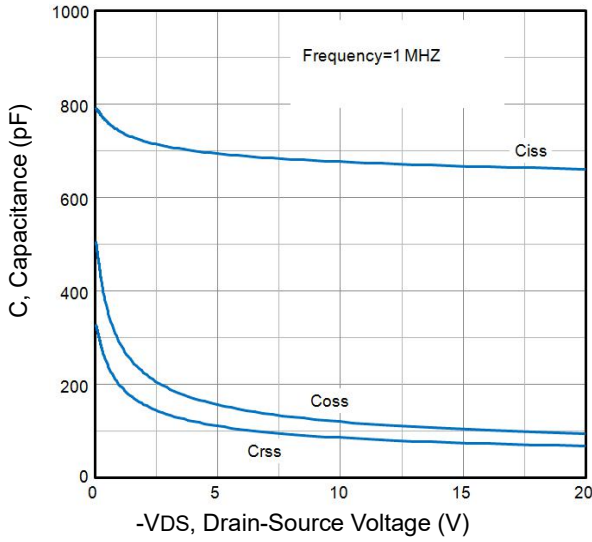


Fig7. Typical Capacitance Vs. Drain-Source Voltage

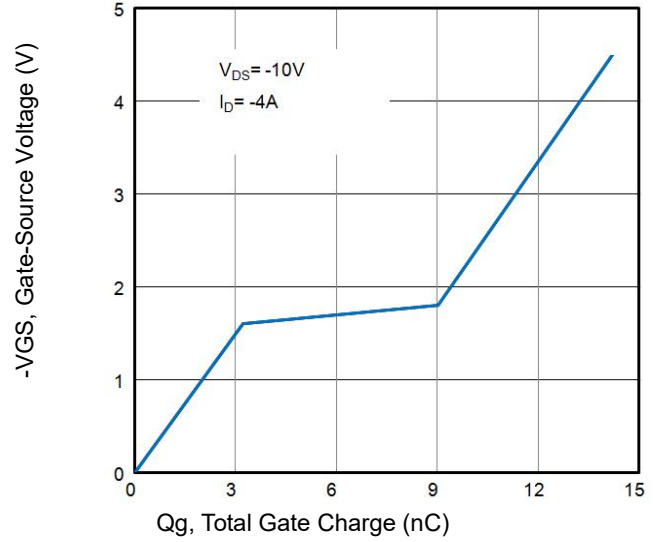


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

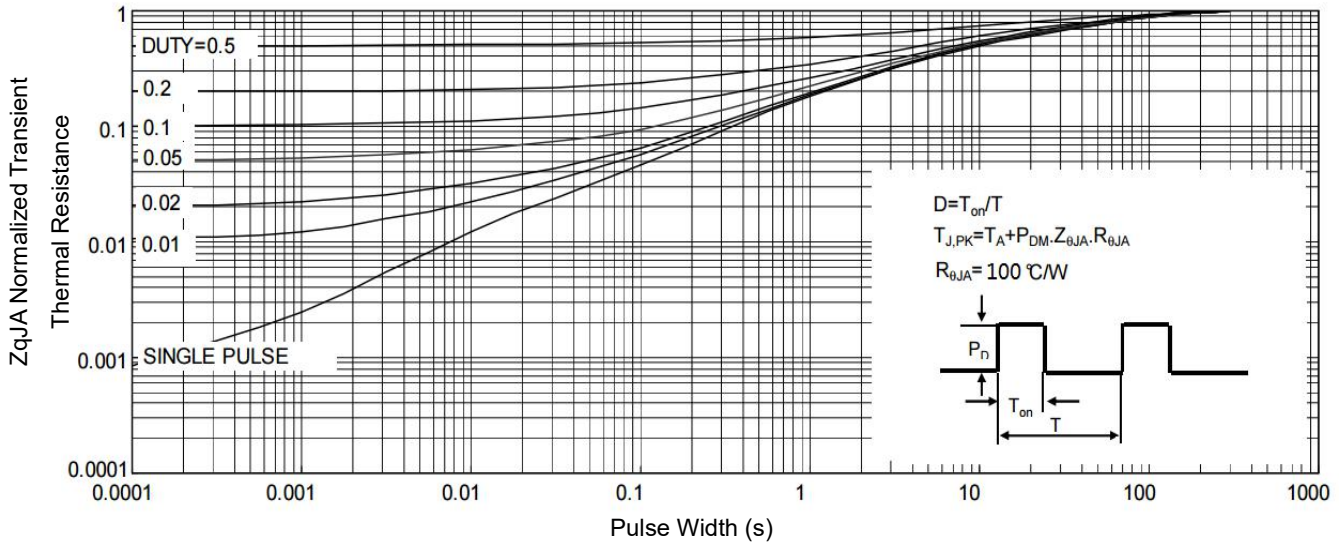
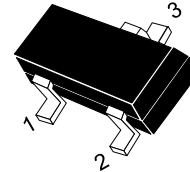
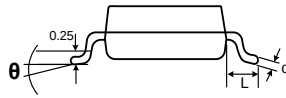
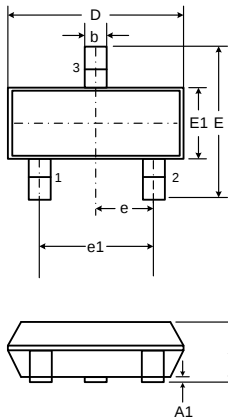


Fig9. Normalized Maximum Transient Thermal Impedance

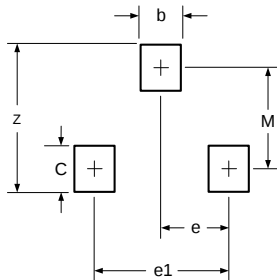
Outline Drawing – SOT23

PACKAGE OUTLINE



DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
b	0.30	0.50	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	2.25	2.55	0.089	0.100
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.0374 BSC	
e1	1.80	2.00	0.071	0.079
L	0.45	0.65	0.018	0.026
θ	0	8°	0	8°



DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.080	2.02
C	0.032	0.80
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.90 BSC
b	0.032	0.80

Notes

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Pin 3 is the cathode (Unidirectional Only).
4. Dimensions are exclusive of mold flash and metal burrs.