

Dual N-Channel Power MOSFET

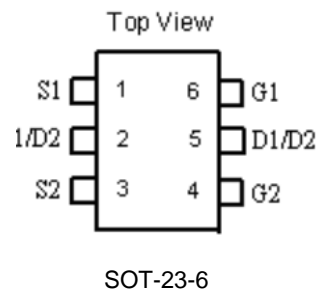
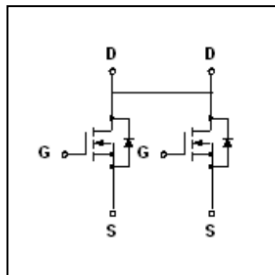
FEATURES

- 20V 5A N-channel Trench Mosfet
- $R_{DS(ON)} \leq 27m\Omega$ @ $V_{GS}=4.5V, I_D=5A$
- $R_{DS(ON)} \leq 36m\Omega$ @ $V_{GS}=2.5V, I_D=3A$
- Low gate Charge
- Fast switching capability
- High reliability and rugged

APPLIATION

- Portable Equipment
- Battery Powered System

SYMBOL



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DSS}	20	V	
Gate-Source Voltage	V_{GSS}	± 12	V	
Drain Current(Note1)	Continuous	I_D	5	A
	Pulsed	I_{DM}	20	A
Power Dissipation ($T_A=25^\circ C$) (Note 2)	$T_A=25^\circ C$	P_D	0.83	W
	$T_A=100^\circ C$		0.3	
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	150	$^\circ C/W$	
Maximum Junction Temperature	T_J	150	$^\circ C$	
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ C$	

Note: 1. Pulse Test: Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$

2. Pulse width limited by $T_J(MAX)$

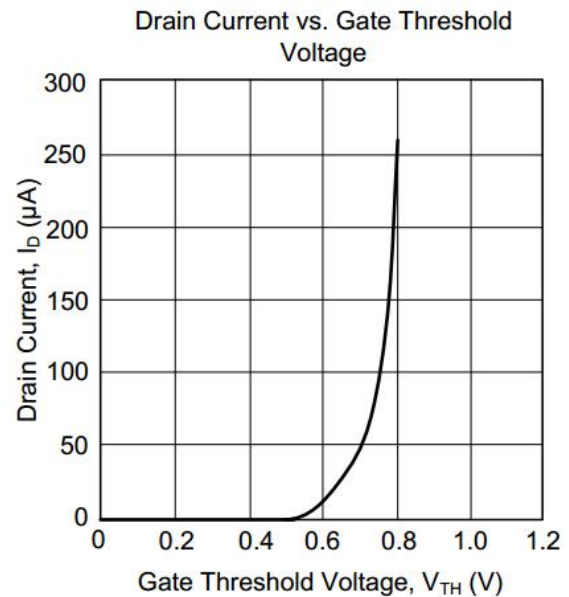
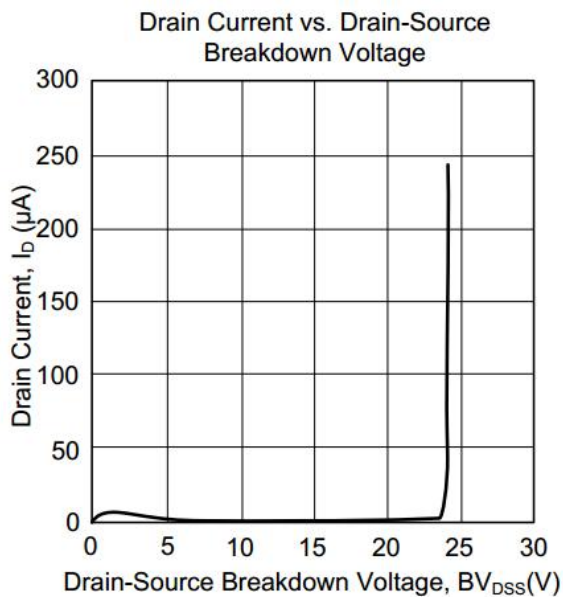
ELECTRICAL CHARACTERISTICS ($T_J=25^\circ C$, unless otherwise Noted)

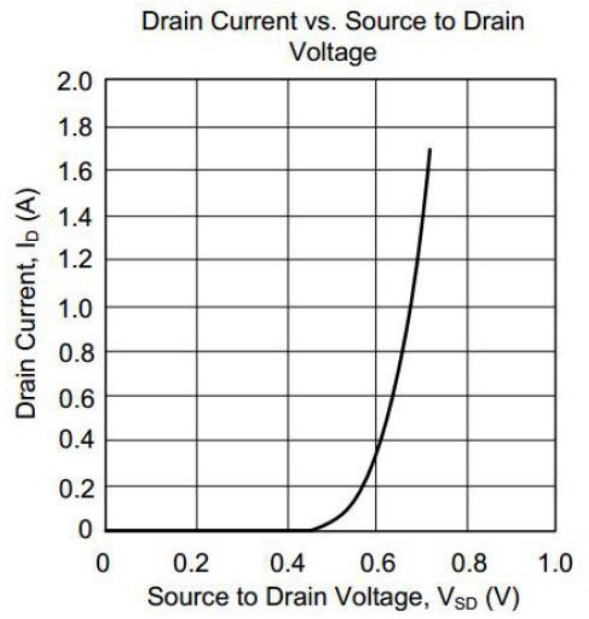
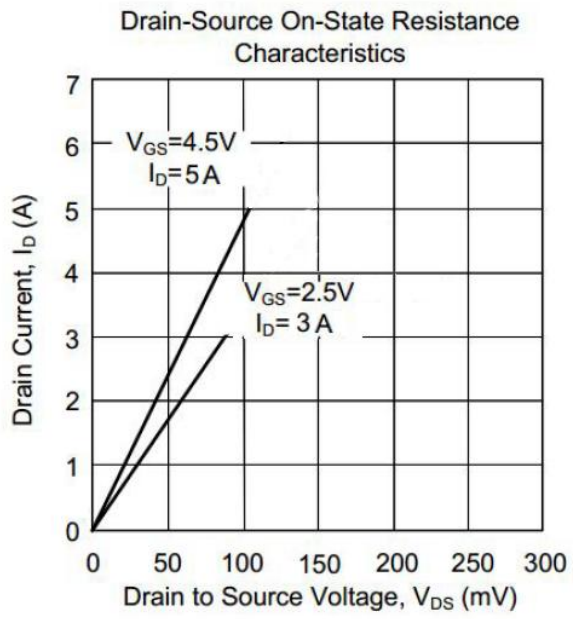
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	20			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5		1.2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=5.0A$		22	27	$m\Omega$
		$V_{GS}=2.5V, I_D=3A$		28	36	$m\Omega$

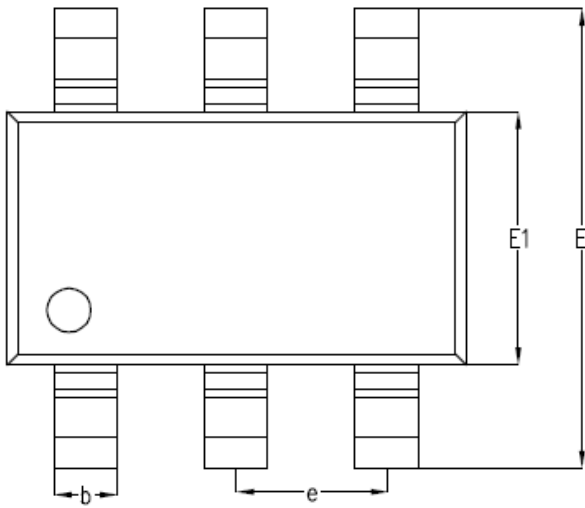
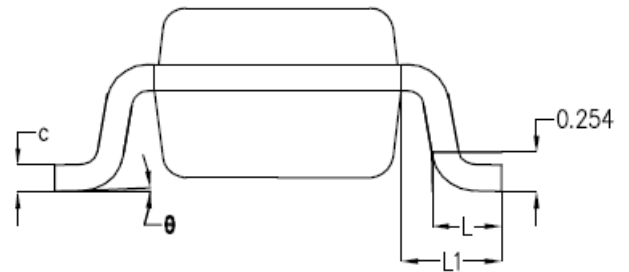
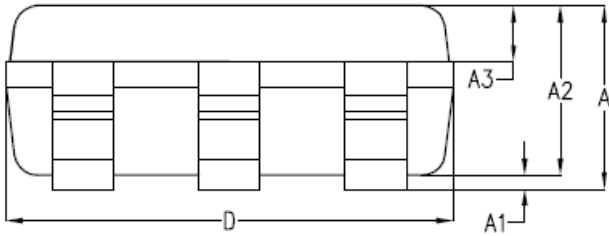
ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise Noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	VDS=10V, VGS=0V, f=1.0MHz		630		pF
Output Capacitance	C _{OSS}			312		pF
Reverse Transfer Capacitance	C _{RSS}			145		pF
SWITCHING PARAMETERS						
Turn-ON Delay Time (Note)	t _{D(ON)}	VGS=4V, VDS=10V, RD=10Ω, RG=10Ω, ID=1A		18		ns
Turn-ON Rise Time	t _R			5		ns
Turn-OFF Delay Time	t _{D(OFF)}			42		ns
Turn-OFF Fall-Time	t _F			19		ns
Total Gate Charge(Note)	Q _G	VDS =20V, VGS =5V, ID =5.0A		23		nC
Gate Source Charge	Q _{GS}			4.5		nC
Gate Drain Charge	Q _{GD}			6.8		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	IS=1.7A, VGS=0V		1.2		V
Diode Continuous Forward Current	I _S	VD=VG, VS=1.3V		1.5		A

TYPICAL CHARACTERISTICS





SOT-23-6 Package Information


SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	-	1.19	1.24
A1	-	0.05	0.09
A2	1.05	1.10	1.15
A3	0.31	0.36	0.41
b	0.35	0.40	0.45
c	0.12	0.17	0.22
D	2.85	2.90	2.95
E	2.80	2.90	3.00
E1	1.55	1.60	1.65
e	0.95BSC		
L	0.37	0.45	0.53
L1	0.65BSC		
θ	0°	2°	8°