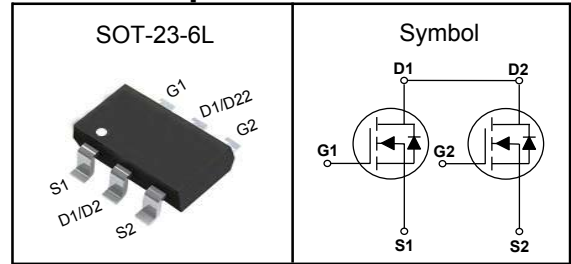


Common-Drain Dual N-Channel Enhancement Mode MOSFET
Features

- Low R_{dson} for low conduction loss
- Reliable and Rugged
- ROHS Compliant & Halogen-Free

Pin Description

Applications

- Power Management in Desktop Computer
- DC/DC Converters

V _{DSS}	20	V
R _{DS(ON)-Typ}	14	mΩ
I _D	8.5	A

Absolute Maximum Ratings (T_A=25°C, Unless Otherwise Noted)

Symbol	Parameter	Rating	Unit
V _{DSS}	Drain-Source Voltage	20	V
V _{GSS}	Gate-Source Voltage	±12	V
T _J	Maximum Junction Temperature	-55 to 150	°C
T _{STG}	Storage Temperature Range	-55 to 150	°C
I _{DM} ^①	Pulse Drain Current Tested	30	A
I _D	Continuous Drain Current	8.5	A
P _D	Maximum Power Dissipation	1.5	W

Thermal Characteristics

Symbol	Parameter	Rating	Unit
R _{θJA}	Thermal Resistance-Junction to Ambient	83	°C/W

Note ① : Max. current is limited by bonding wire.

Note ② : UIS tested and pulse width are limited by maximum junction temperature 150°C.

Note ③ : Surface Mounted on 1in² FR-4 board with 1oz.



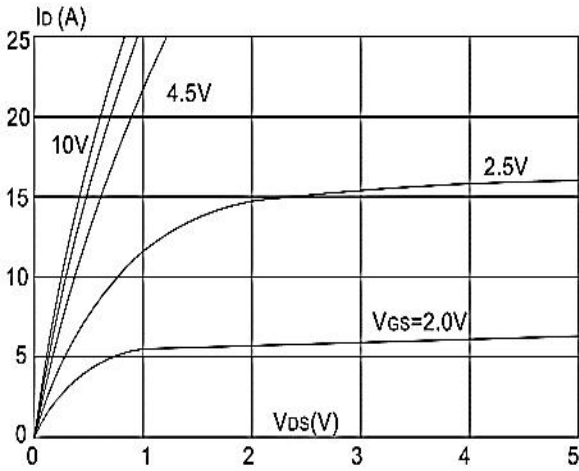
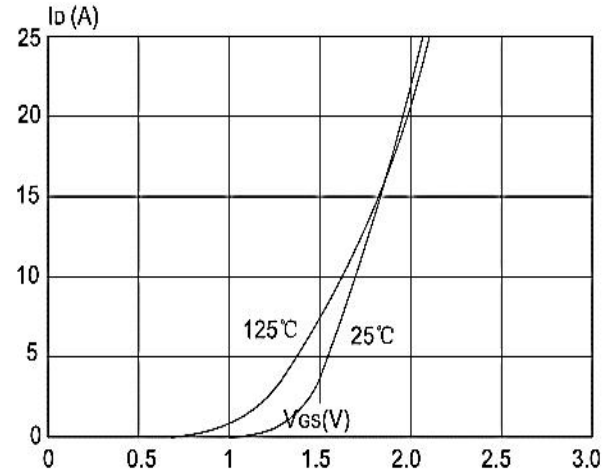
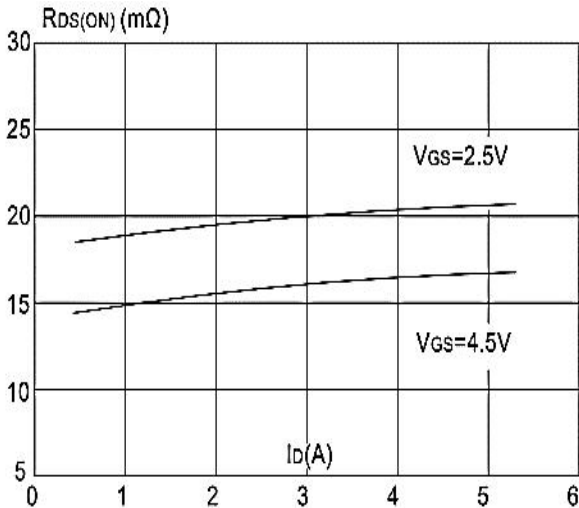
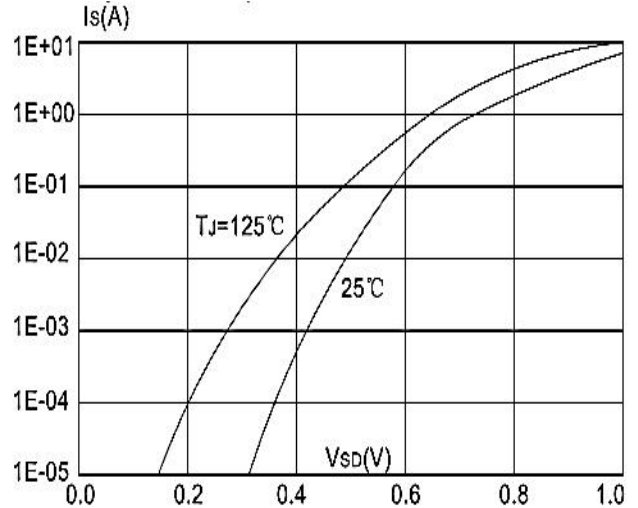
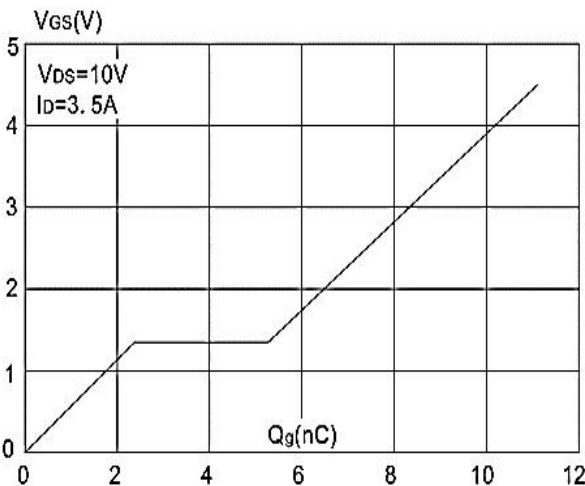
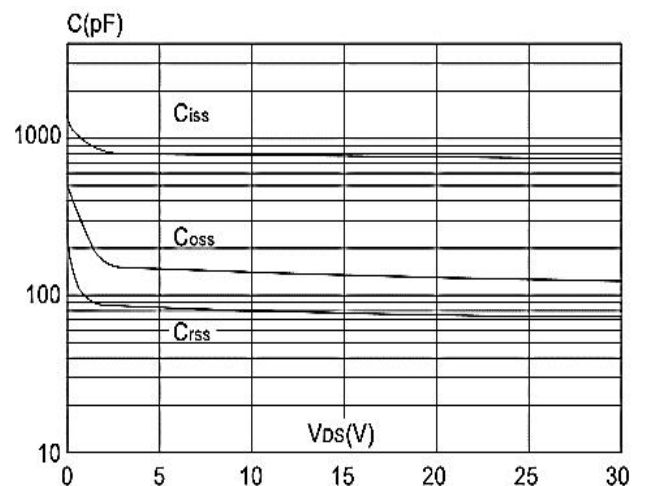
Common-Drain Dual N-Channel Enhancement Mode MOSFET

Electrical Characteristics (T_J=25°C, Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Static Electrical Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	20	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20V, V _{GS} =0V	---	---	1	uA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	0.5	---	1.0	V
I _{GSS}	Gate Leakage Current	V _{GS} =±10V, V _{DS} =0V	---	---	±100	nA
R _{DS(ON)}	Drain-Source On-state Resistance	V _{GS} =4.5V, I _D =4A	---	14	18	mΩ
		V _{GS} =2.5V, I _D =3A	---	16	22	mΩ
Dynamic Characteristics ^⑤						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =10V, Freq.=1MHz	---	780	---	pF
C _{oss}	Output Capacitance		---	140	---	
C _{rss}	Reverse Transfer Capacitance		---	80	---	
T _{d(on)}	Turn-on Delay Time	V _{DD} =10V, V _{GS} =4.5V, I _D =6.8A	---	9	---	nS
T _r	Turn-on Rise Time		---	30	---	
T _{d(off)}	Turn-off Delay Time		---	35	---	
T _f	Turn-off Fall Time		---	10	---	
Q _g	Total Gate Charge	V _{DS} =10V, V _{GS} =4.5V, I _D =6.8A	---	11	---	nC
Q _{gs}	Gate-Source Charge		---	2.3	---	
Q _{gd}	Gate-Drain Charge		---	2.9	---	
Source-Drain Characteristics (T _J =25°C)						
V _{SD} ^④	Diode Forward Voltage	I _S =6.8A, V _{GS} =0V	---	---	1.2	V

Note ④ : Pulse test (pulse width≤300us, duty cycle≤2%).

Note ⑤ : Guaranteed by design, not subject to production testing.

Common-Drain Dual N-Channel Enhancement Mode MOSFET
Typical Characteristics

Figure 1: Output Characteristics

Figure 2: Typical Transfer Characteristics

Figure 3: On-resistance vs. Drain Current

Figure 4: Body Diode Characteristics

Figure 5: Gate Charge Characteristics

Figure 6: Capacitance Characteristics

Common-Drain Dual N-Channel Enhancement Mode MOSFET

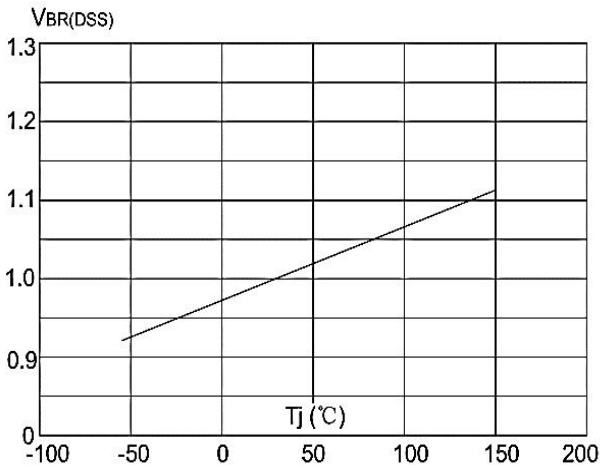


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

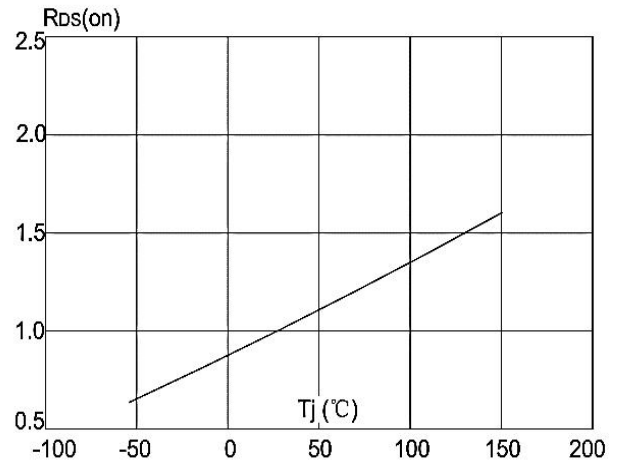


Figure 8: Normalized on Resistance vs. Junction Temperature

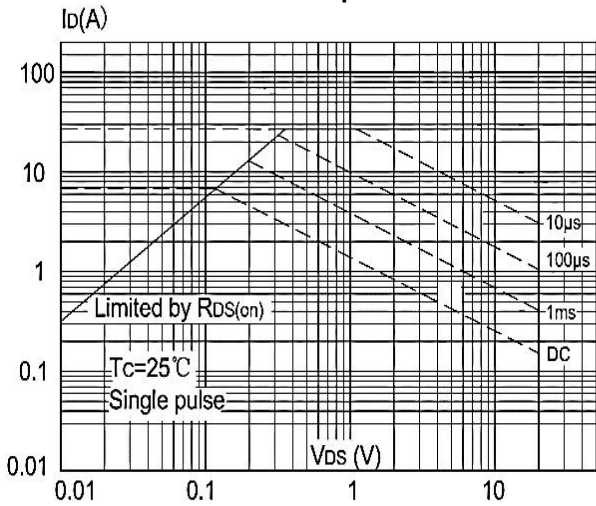


Figure 9: Maximum Safe Operating Area vs. Case Temperature

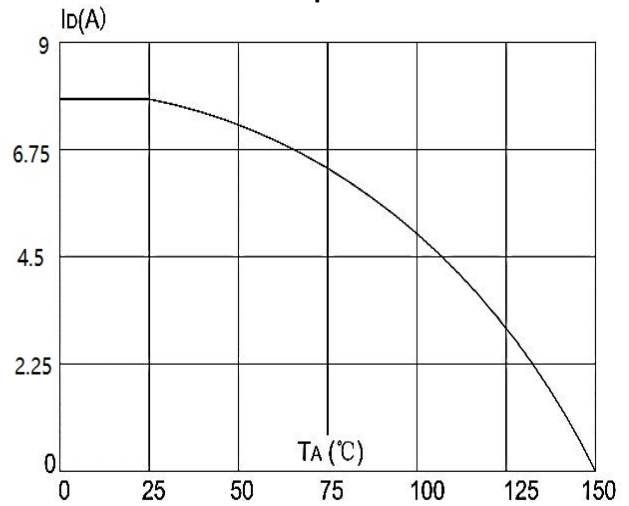


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

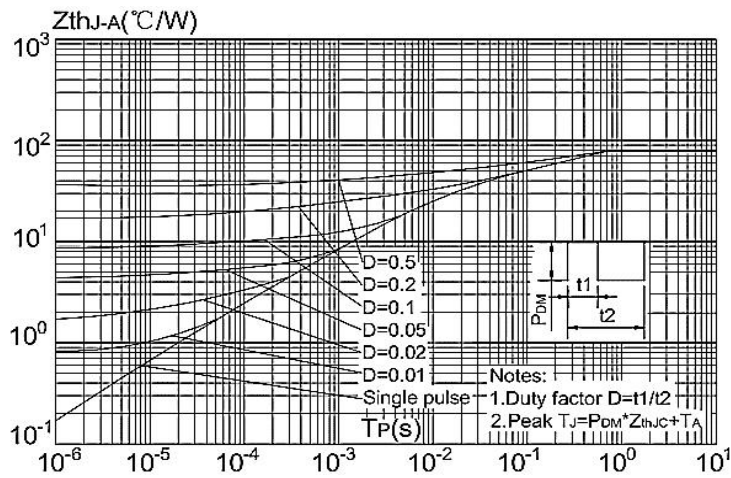
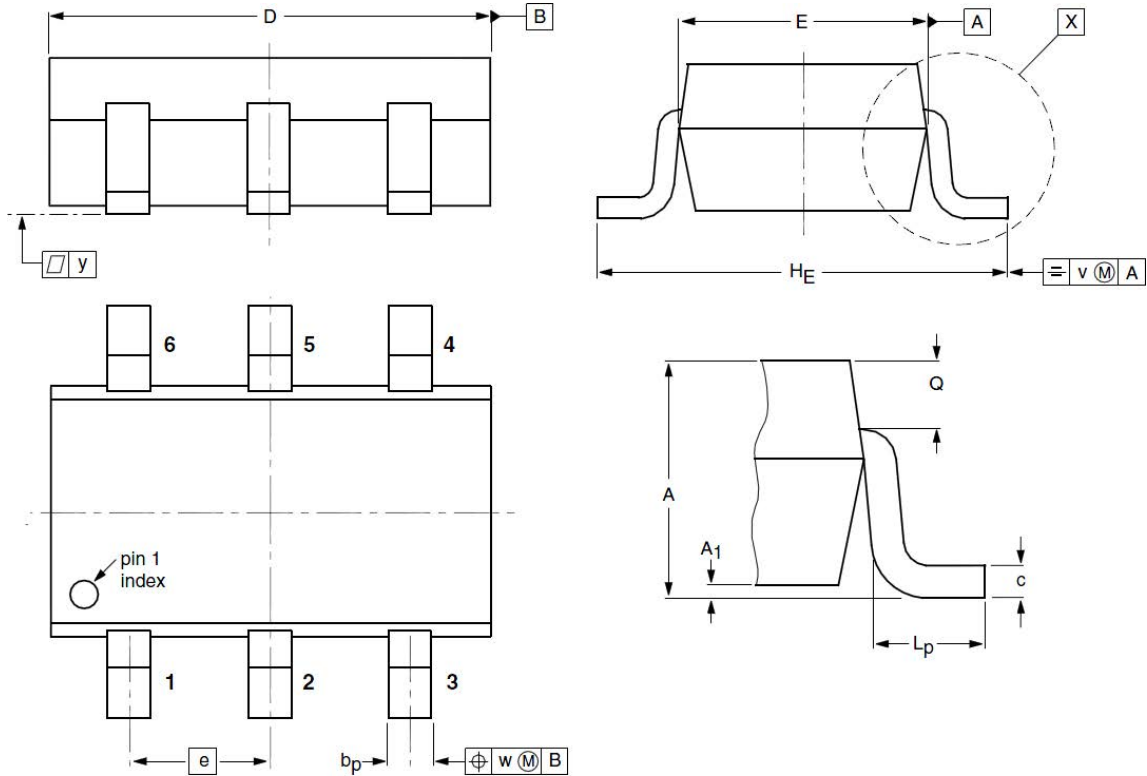


Figure 11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

Common-Drain Dual N-Channel Enhancement Mode MOSFET
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	--				