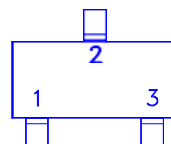


N-channel Enhancement Mode Power MOSFET

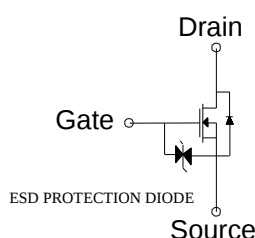
FEATURES

- Advanced Trench Technology
- Excellent RDS(ON) and Low Gate Charge
- Lead Free
- ESD Protected:2KV

SOT-323



1. GATE
2. DRAIN
3. SOURCE



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current-Continuous	$T_A = 25^\circ\text{C}$	I_D	0.3	A
	$T_A = 70^\circ\text{C}$		0.19	A
Drain Current-Continuous ¹		I_{DM}	1.2	A
Maximum Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	0.3	W
Junction & Storage Temperature Range		T_J, T_{STG}	- 55 to 150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Thermal Resistance Junction–Ambient ²	R_{thJA}	415	$^\circ\text{C/W}$

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. R_{thJA} is measured with the device mounted on a 1inch² pad of 2oz copper FR4 PCB)

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

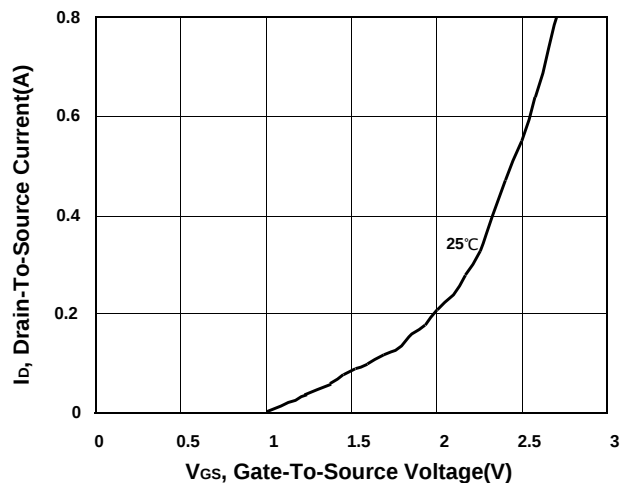
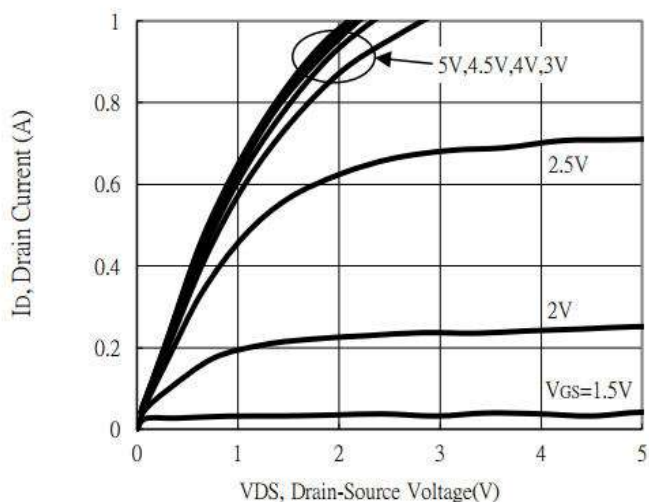
Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V , I _D = -250uA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V , V _{GS} = 0V			1.0	uA
Gate-Body Leakage	I _{GSS}	V _{GS} = ±20V , V _{DS} = 0V			±10	uA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	0.7	1.1	1.5	V
Drain-Source On-State Resistance ³	R _{DS(on)}	V _{GS} = 10V , I _D = 0.3A		1.8	2.2	Ω
	R _{DS(on)}	V _{GS} = 4.5V , I _D = 0.2A		2.0	3.0	Ω
DYNAMIC CHARACTERISTICS ⁴						
Input Capacitance	C _{ISS}	V _{DS} = 25V , V _{GS} = 0V f = 1.0MHz		22		pF
Output Capacitance	C _{OSS}			3.4		pF
Reverse Transfer Capacitance	C _{RSS}			2.3		pF
Total Gate Charge	Q _g	V _{GS} = 0 to 4.5V V _{DS} =10V, I _D = 0.3A		1.6		nC
Gate-Source Charge	Q _{gs}			0.2		nC
Gate Drain("Miller") Charge	Q _{gd}			0.5		nC
SWITCHING CHARACTERISTICS ⁴						
Turn-On Delay Time	t _{D(ON)}	V _{GS} = 10V, V _{DD} = 10V I _D = 0.2A, R _{GEN} = 10Ω		2		ns
Rise Time	t _r			14		ns
Turn-Off Delay Time	t _{D(OFF)}			6		ns
Fall Time	t _f			19		ns
Drain-Source Diode Characteristics and Max Ratings						
Maximum Continuous Drain to Source Diode Forward Current	I _S				0.3	A
Maximum Pulsed Drain to Source Diode Forward Current	I _{SM}				1.2	A
Drain to Source Diode Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = 0.3A			1.2	V

Notes: 3.Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.

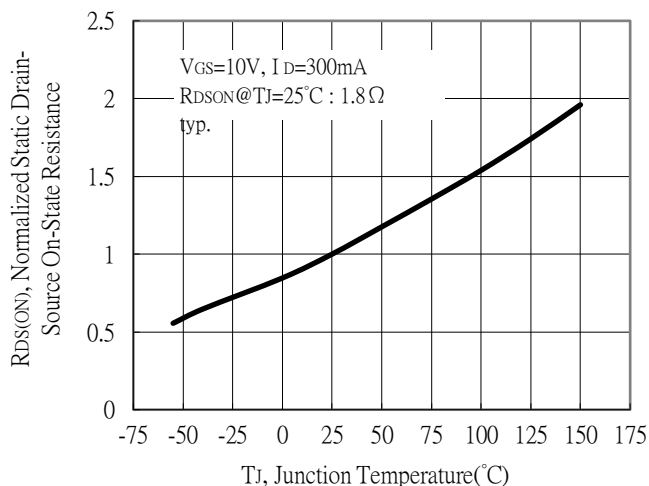
4. Defined by design, not subject to production.

Typical Characteristics

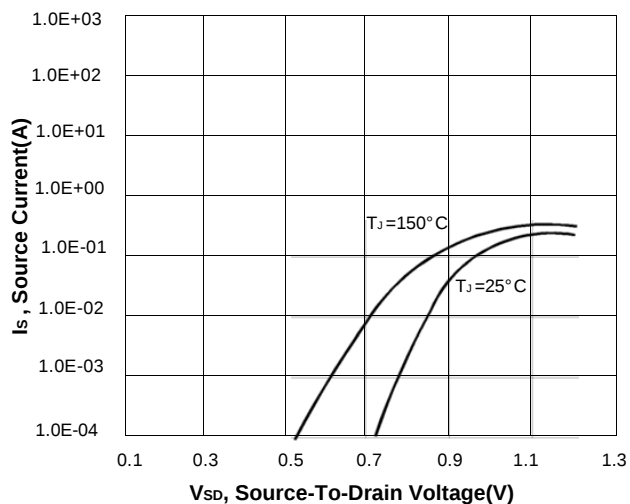
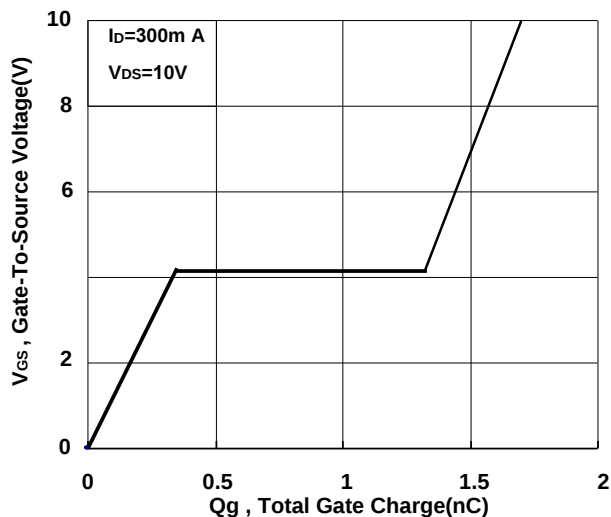
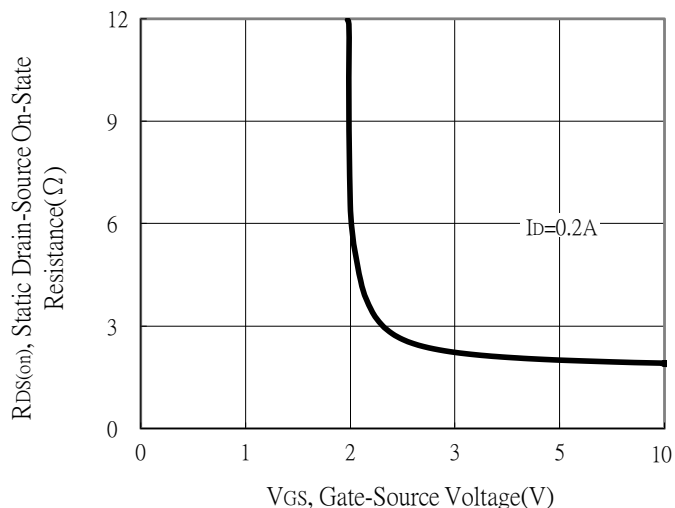
Typical Output Characteristics



Drain-Source On-State Resistance vs Junction Temperature

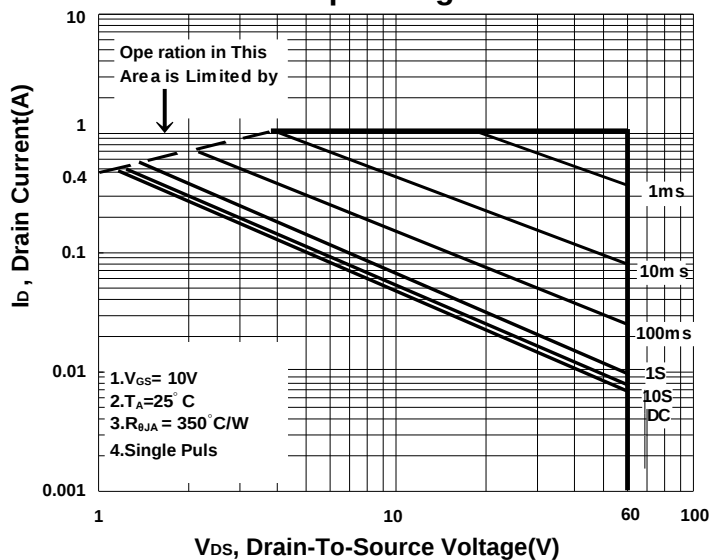


Static Drain-Source On-State Resistance vs Gate-Source Voltage

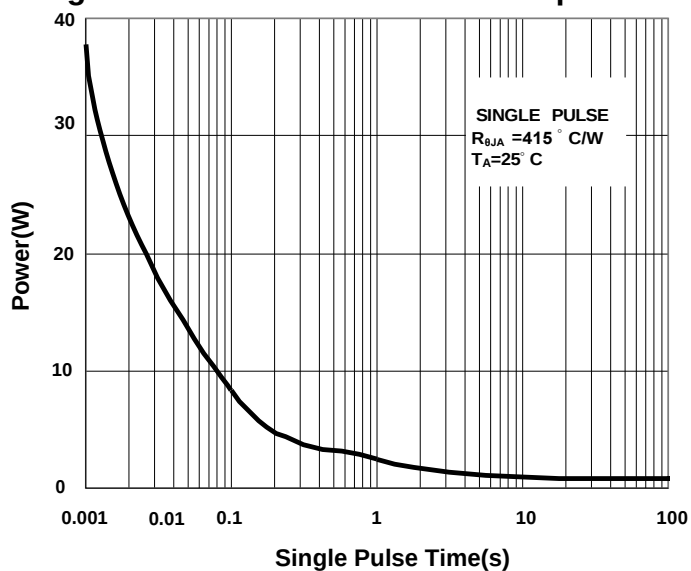


Typical Characteristics

Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curves

