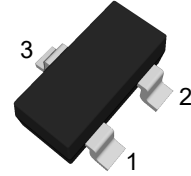


Features

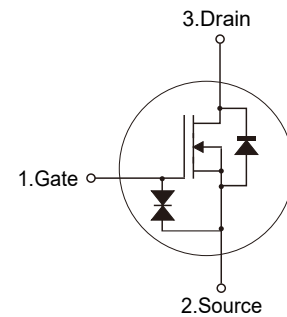
- Depletion Mode
- ESD Improved Capability
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 1



SOT-23

Product Summary

- $V_{DS} = 600V, I_D = 0.03A$
- $R_{DS(on)} < 700\Omega @ V_{GS} = 0V$
- $R_{DS(on)} < 800\Omega @ V_{GS} = 10V$



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	0.03	A
Drain Current-Pulsed	I_{DM}	0.12	A
Maximum Power Dissipation	P_D	0.5	W
Gate Source ESD (HBM-C=100pF, R=1.5k Ω)	$V_{ESD(G-S)}$	300	V
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

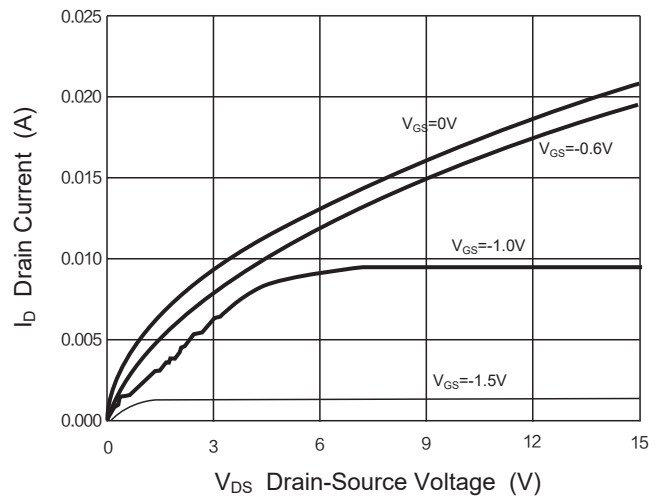
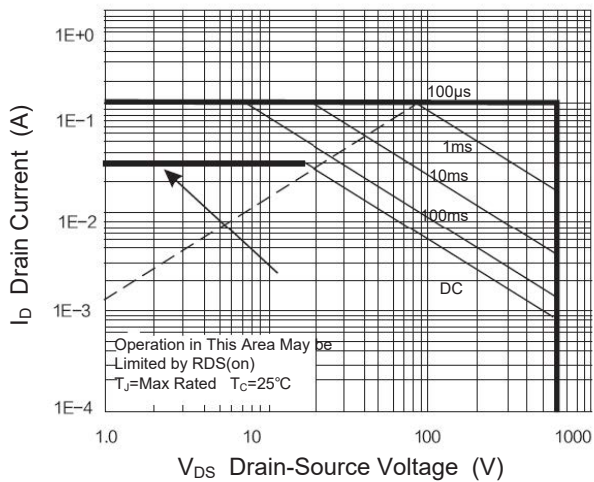
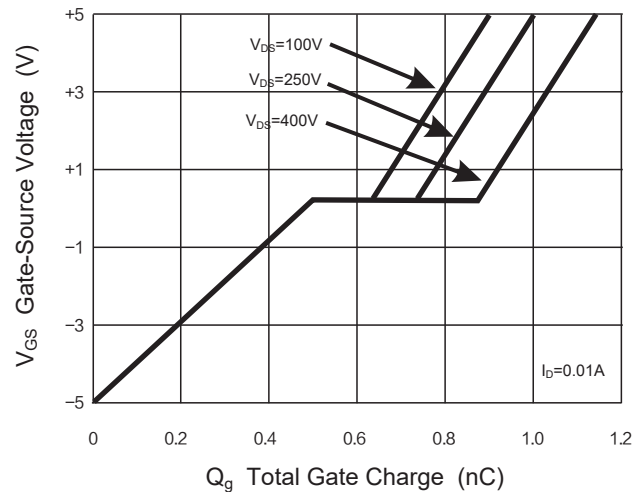
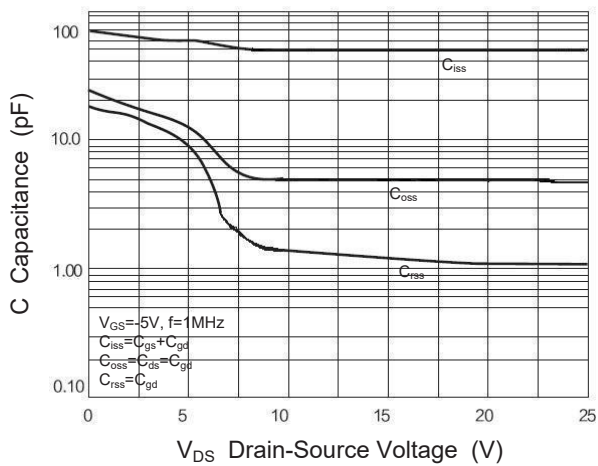
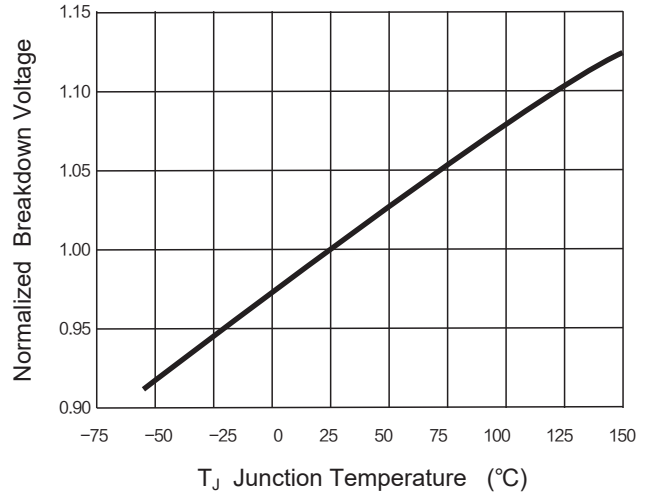
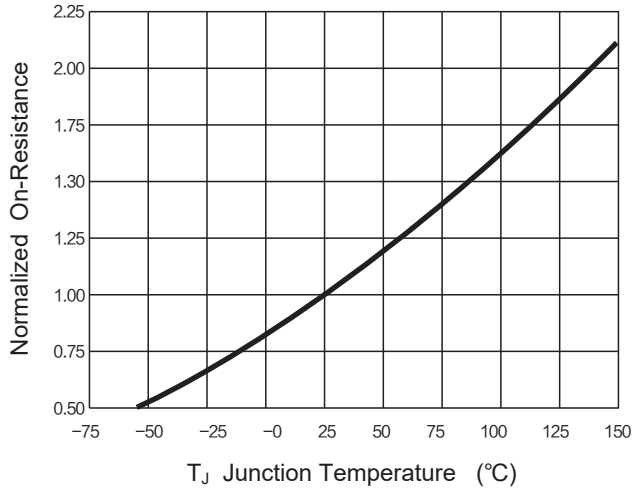
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	250	°C/W
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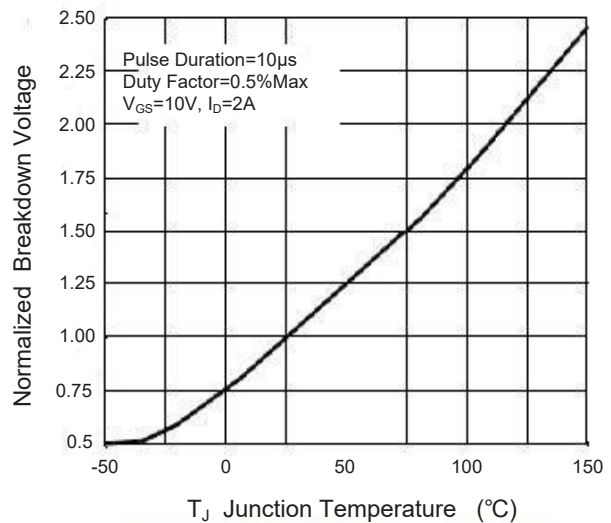
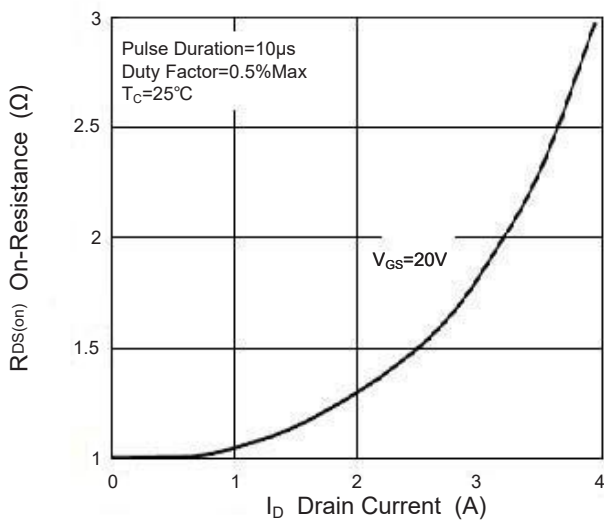
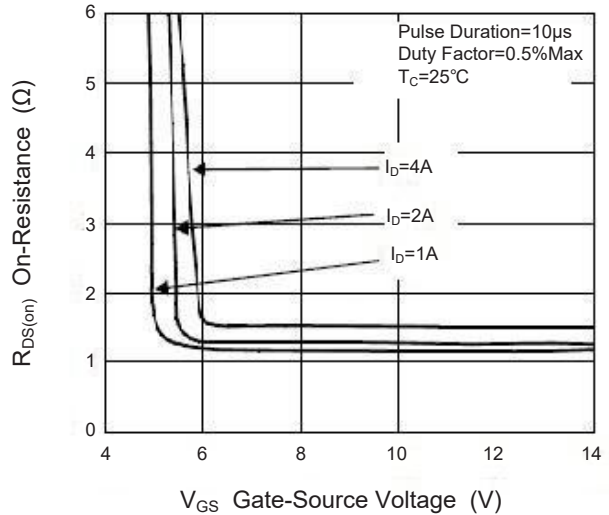
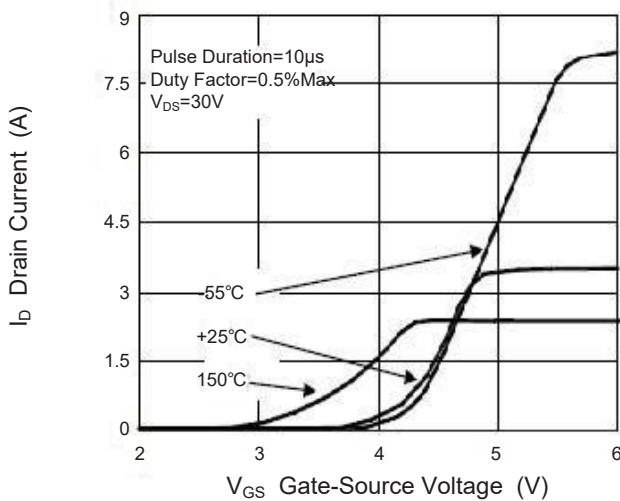
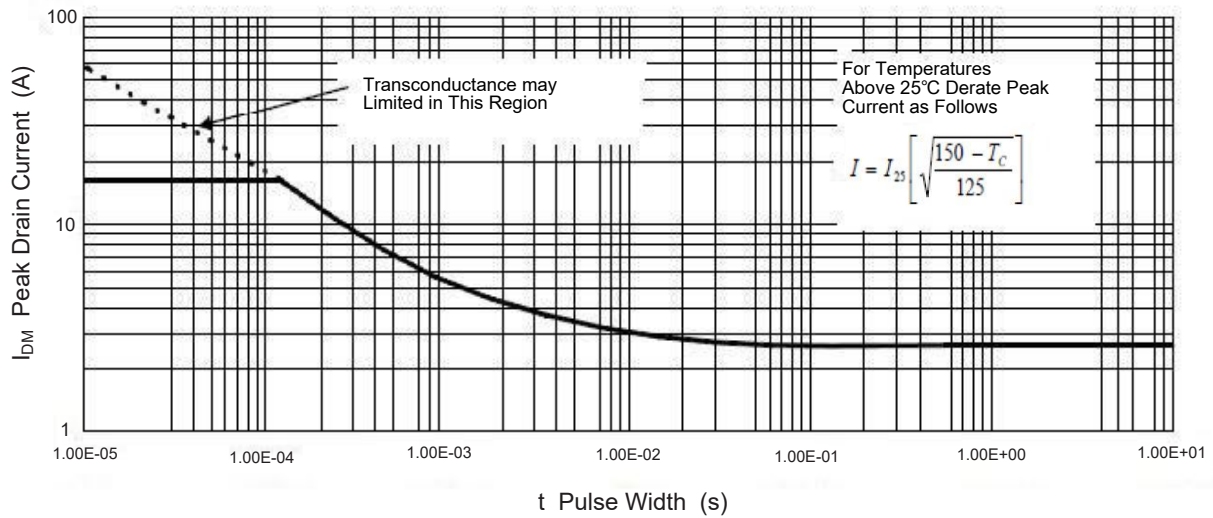
Electrical Characteristics

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=-5V, I_D=250\mu A$	600	--	--	V
Gate-Body Leakage Current	$I_{D(off)}$	$V_{DS}=600V, V_{GS}=-5V$	--	--	0.1	μA
		$V_{DS}=480V, V_{GS}=-5V, T_A=125^{\circ}C$	--	--	10	μA
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 10V$	--	--	± 200	nA
ON Characteristics						
Gate-to-Source Cut-off Voltage	$V_{GS(off)}$	$V_{DS}=3V, I_D=8\mu A$	-2.7	-1.8	-1	V
On-State Drain Current	I_{DSS}	$V_{GS}=0V, V_{DS}=25V$	12	--	--	mA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=0V, I_D=3mA$	--	350	700	m Ω
		$V_{GS}=10V, I_D=16mA$	--	400	800	m Ω
Dynamic Characteristics						
Forward Transconductance	g_{FS}	$V_{DS}=50V, I_D=0.01A$	8	17	--	mS
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=-5V, f=1MHz$	--	50	--	pF
Output Capacitance	C_{oss}		--	4.53	--	pF
Reverse Transfer Capacitance	C_{rss}		--	1.08	--	pF
Total Gate Charge	Q_g	$V_{DD}=400V, I_D=0.01A, V_{GS}=-5V\sim 5V$	--	1.14	--	nC
Gate-Source Charge	Q_{gs}		--	0.5	--	nC
Gate-Drain Charge	Q_{gd}		--	0.37	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=300V, I_D=0.01A, V_{GS}=-5V\sim 7V, R_G=6\Omega$	--	9.9	--	nS
Turn-on Rise Time	t_r		--	55.8	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	56.4	--	nS
Turn-off Fall Time	t_f		--	136	--	nS
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=-5V, I_F=16mA$	--	--	1.2	V
Diode Forward Current	I_S		--	--	0.025	A
Gate-Source Zener Diode						
Gate-Source Breakdown Voltage	V_{GSO}	$I_{GS}=\pm 1mA$ (Open Drain)	--	0.75	1.2	V

Typical Characteristic Curves





Package Outline

SOT-23

Dimensions in mm

