

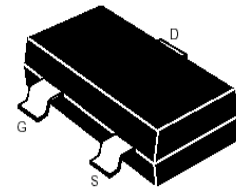
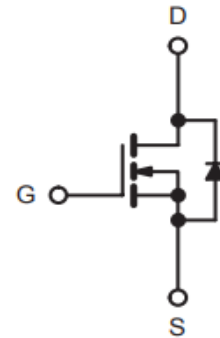
»Features

$V_{DS} = 20V$   
 $I_D = 6.5A$   
 $R_{DS(ON)} @V_{GS} = 4.5V, MAX = 22m\Omega$   
 $R_{DS(ON)} @V_{GS} = 2.5V, MAX = 26m\Omega$

»General Description

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- SOT-23 for Surface Mount Package.

»Pin Configurations



»Absolute Maximum Ratings @ $T_A=25^\circ C$  unless otherwise noted

Characteristic	Symbol	Max	Unit
Drain-Source Voltage	$BV_{DSS}$	20	V
Gate- Source Voltage	$V_{GS}$	$\pm 8$	V
Drain Current (continuous)	$I_D$	6.5	A
Drain Current (pulsed)	$I_{DM}$	30	A
Total Device Dissipation $T_A=25^\circ C$	$P_D$	1400	mW
Junction	$T_J$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55to+150	$^\circ C$

**»Electrical Characteristics @ $T_A=25^{\circ}\text{C}$  unless otherwise noted**

Characteristic	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage ( $I_D = 250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	20	—	—	V
Gate Threshold Voltage ( $I_D = 250\mu\text{A}, V_{GS}=V_{DS}$ )	$V_{GS(th)}$	0.4	—	1	V
Diode Forward Voltage Drop ( $I_S = 1\text{ A}, V_{GS}=0\text{V}$ )	$V_{SD}$	—	—	1	V
Zero Gate Voltage Drain Current ( $V_{GS}=0\text{V}, V_{DS}= 16\text{V}$ ) ( $V_{GS}=0\text{V}, V_{DS}= 16\text{V}, T_A=55^{\circ}\text{C}$ )	$I_{DSS}$	—	—	1 5	$\mu\text{A}$
Gate Body Leakage ( $V_{GS}=\pm 8\text{ V}, V_{DS}=0\text{V}$ )	$I_{GSS}$	—	—	$\pm 10$	nA
Static Drain-Source On-State Resistance ( $I_D = 6.5\text{ A}, V_{GS}= 4.5\text{V}$ )	$R_{DS(ON)}$	—	—	22	$\text{m}\Omega$
Static Drain-Source On-State Resistance ( $I_D = 5.5\text{ A}, V_{GS}= 2.5\text{ V}$ )	$R_{DS(ON)}$	—	—	26	$\text{m}\Omega$
Input Capacitance ( $V_{GS}=0\text{V}, V_{DS}= 10\text{ V}, f=1\text{MHz}$ )	$C_{ISS}$	—	1160	—	pF
Output Capacitance ( $V_{GS}=0\text{V}, V_{DS}= 10\text{ V}, f=1\text{MHz}$ )	$C_{OSS}$	—	180	—	pF
Turn-ON Time ( $V_{DS}= 10\text{ V}, I_D= 3\text{ A}, R_{GEN}=6\Omega$ )	$t_{(on)}$	—	8	—	ns
Turn-OFF Time ( $V_{DS}= 10\text{ V}, I_D= 3\text{ A}, R_{GEN}=6\Omega$ )	$t_{(off)}$	—	60	—	ns

**Notes :**

 \*Pulse Test : Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

»Typical Performance Characteristics (T<sub>J</sub> = 25 °C, unless otherwise noted)

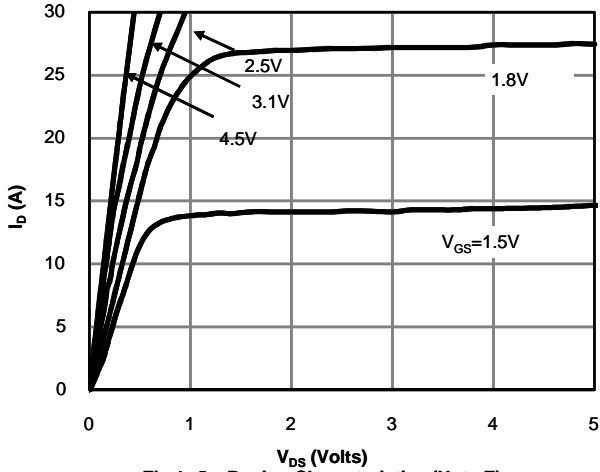


Fig 1: On-Region Characteristics (Note E)

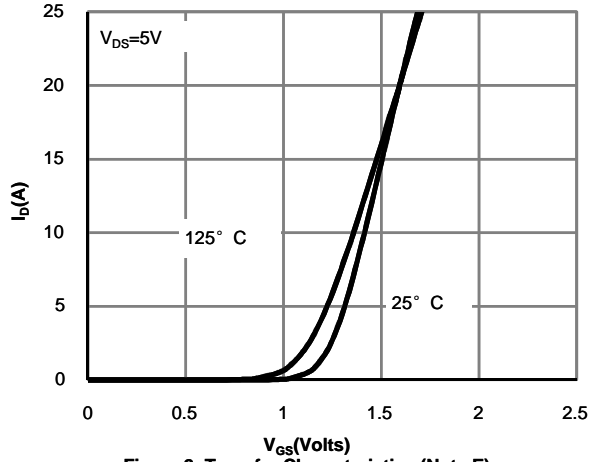


Figure 2: Transfer Characteristics (Note E)

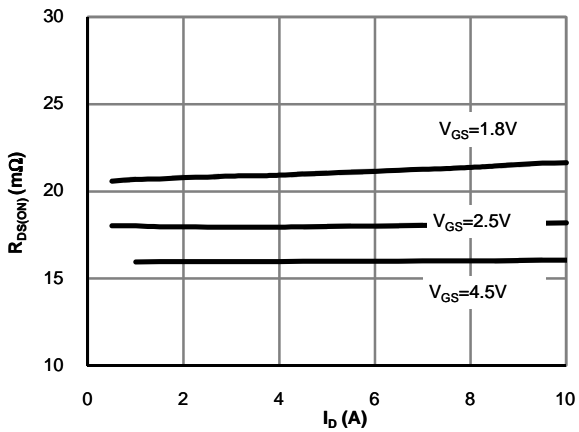


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

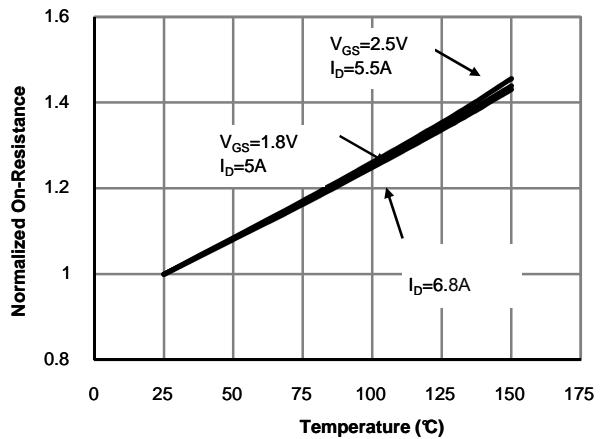


Figure 4: On-Resistance vs. Junction Temperature (Note E)

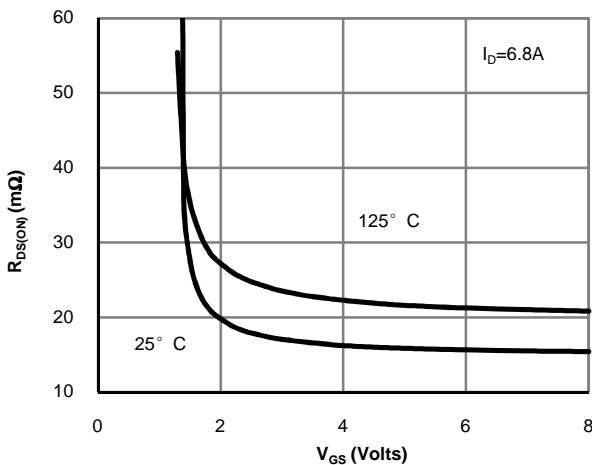


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

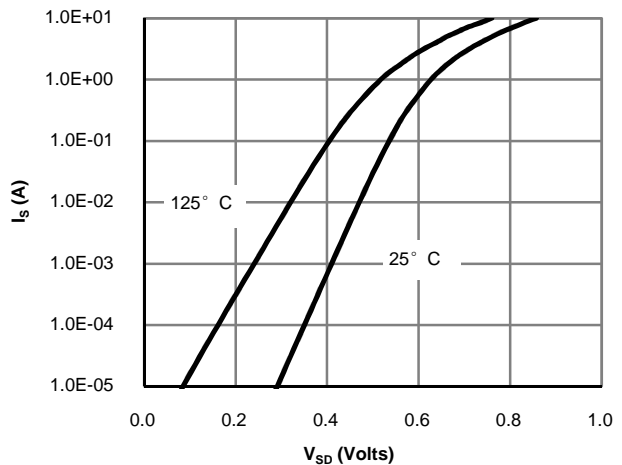


Figure 6: Body-Diode Characteristics (Note E)

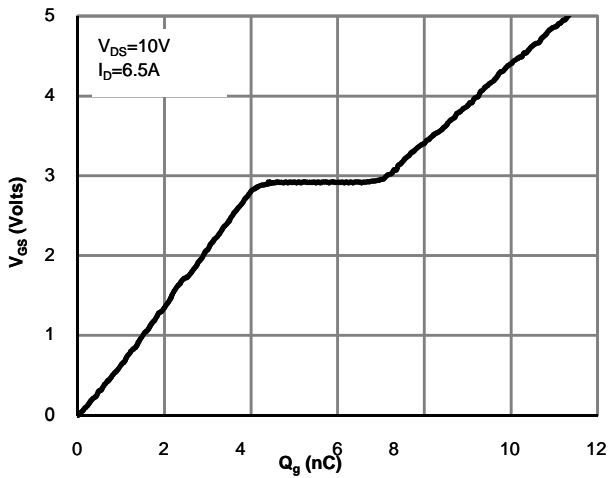


Figure 7: Gate-Charge Characteristics

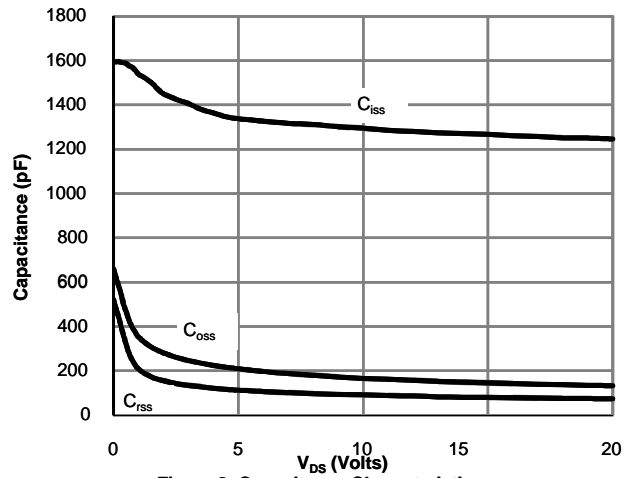


Figure 8: Capacitance Characteristics

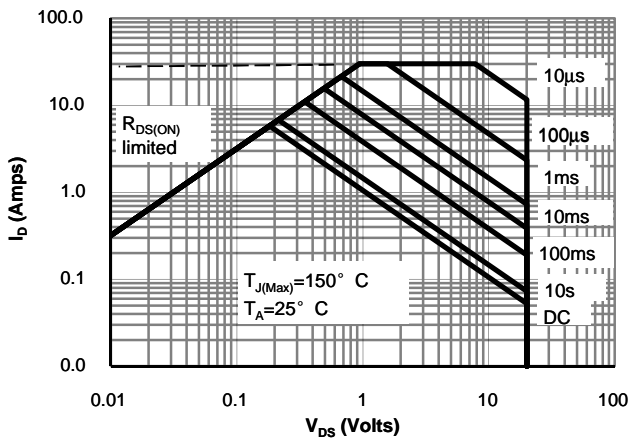


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

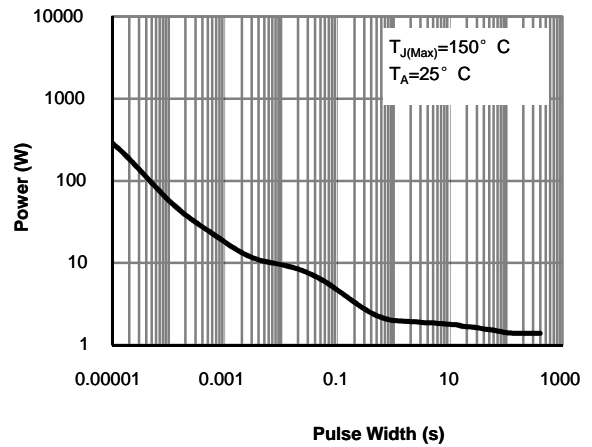
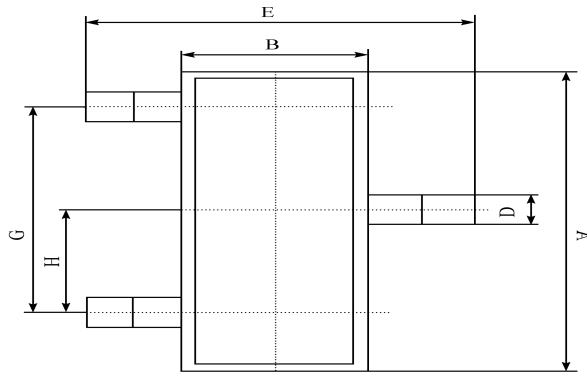


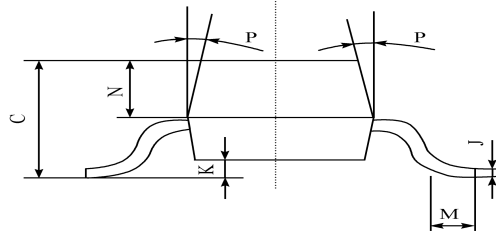
Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

»Package Information

**SOT-23**



A	2.90 ± 0.10
B	1.30 ± 0.10
C	1.00 ± 0.10
D	0.40 ± 0.10
E	2.40 ± 0.20
G	1.90 ± 0.10
H	0.95 ± 0.05
J	0.13 ± 0.05
K	0.00-0.10
M	≥ 0.2
N	0.60 ± 0.10
P	7 ± 2°



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