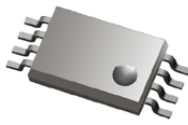
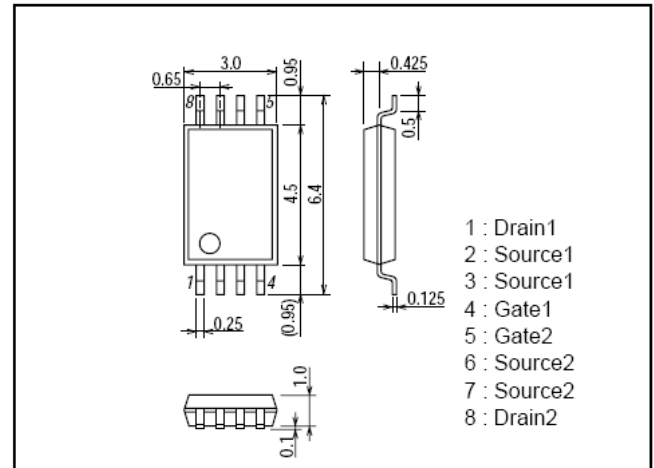


Features

- Low On resistance.
- 2.5V drive.
- Mounting height 1.1mm
- RoHS compliant.



Package Dimensions

 unit:mm
 TSSOP-8


Specifications

Absolute Maximum Ratings at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		20	V
Gate-to-Source Voltage	V_{GSS}		± 8	V
Drain Current (DC)	I_D		7	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{S}$, duty cycle $\leq 1\%$	30	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1000mm ² ×0.8mm) 1unit	0.8	W
Total Dissipation	P_T	Mounted on a ceramic board (1000mm ² ×0.8mm)	1.3	W
Channel Temperature	T_{ch}		150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55~+150	$^{\circ}\text{C}$

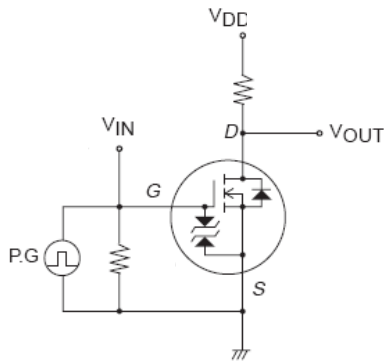
Electrical Characteristics at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=250\mu\text{A}$, $V_{GS}=0$	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=16\text{V}$, $V_{GS}=0$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}$, $V_{DS}=0$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	0.4	0.6	1.0	V
Forward Transconductance	g_{FS}	$V_{DS}=5\text{V}$, $I_D=7\text{A}$		29		S
Static Drain-to-Source On-State Resistance	$R_{DS(ON)}^1$	$I_D=7\text{A}$, $V_{GS}=4.5\text{V}$		16.5	20	$\text{m}\Omega$
	$R_{DS(ON)}^2$	$I_D=5.5\text{A}$, $V_{GS}=2.5\text{V}$		20	24	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$		1160		pF
Output Capacitance	C_{oss}	$V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$		187		pF
Reverse Transfer Capacitance	C_{rss}	$V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$		146		pF

Electrical Characteristics at $T_a=25^{\circ}\text{C}$ (Continued)

Parameter	Symbol	Conditions	Ratings			Unit
			min	Typ	max	
Turn-on Delay Time	$t_{d(\text{on})}$	$V_{\text{GS}}=5\text{V}, V_{\text{DS}}=10\text{V}, R_{\text{L}}=1.35\Omega,$ $R_{\text{GEN}}=3\Omega$		6.2		nS
Rise Time	t_r			12.7		nS
Turn-off Delay Time	$t_{d(\text{off})}$			51.7		nS
Fall Time	t_f			16		nS
Total Gate Charge	Q_g	$V_{\text{DS}}=10\text{V}, V_{\text{GS}}=4.5\text{V}, I_{\text{D}}=7\text{A}$		16		nC
Gate-to-Source Charge	Q_{gs}			0.8		nC
Gate-to-Drain “Miller” Charge	Q_{gd}			3.8		nC
Diode Forward Voltage	V_{SD}	$I_{\text{S}}=1\text{A}, V_{\text{GS}}=0$		0.76	1	V

Switching Time Test Circuit



Electrical Connection

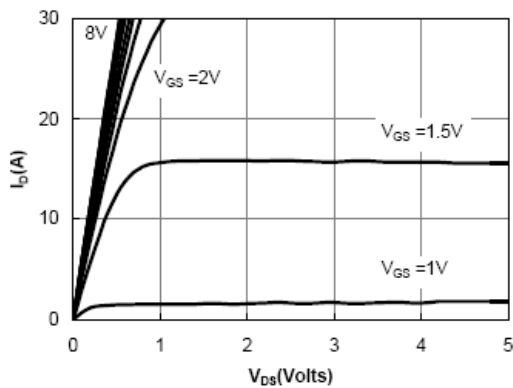
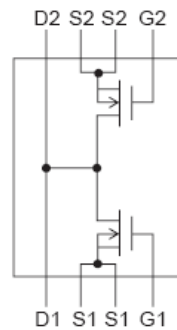


Figure 1: On-Regions Characteristics

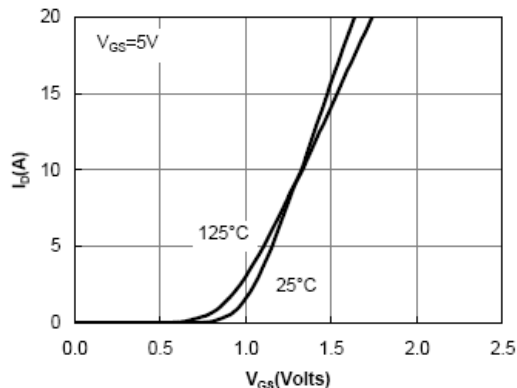


Figure 2: Transfer Characteristics

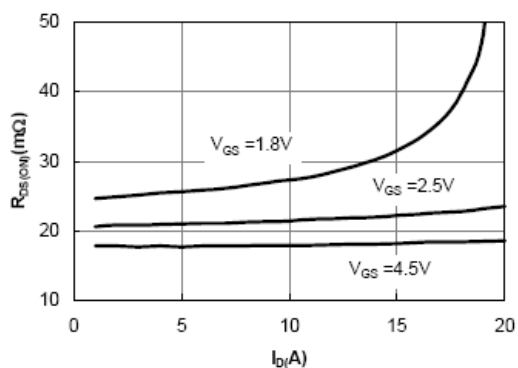


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

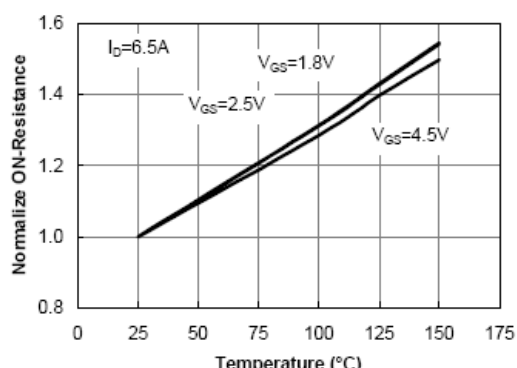


Figure 4: On-Resistance vs. Junction Temperature

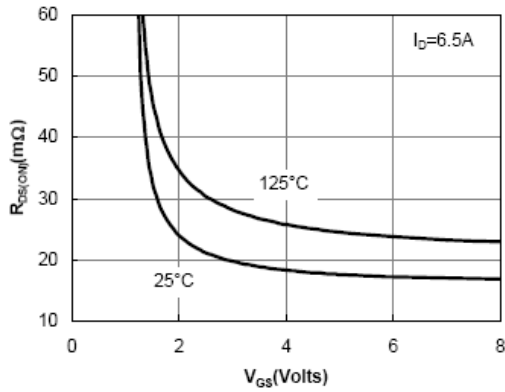


Figure 5: On-Resistance vs. Gate-Source Voltage

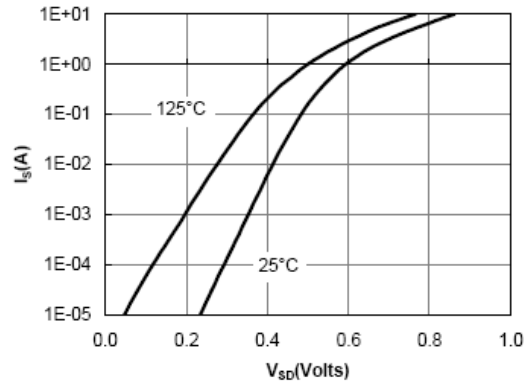


Figure 6: Body-Diode Characteristics

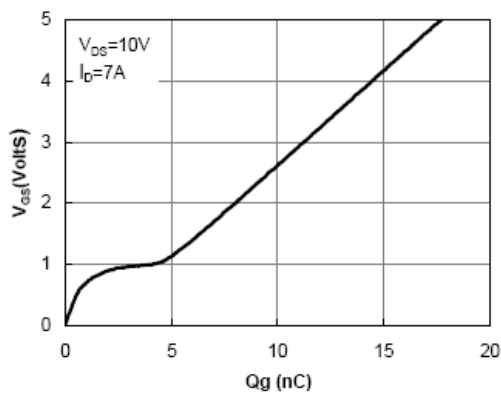


Figure 7: Gate-Charge Characteristics

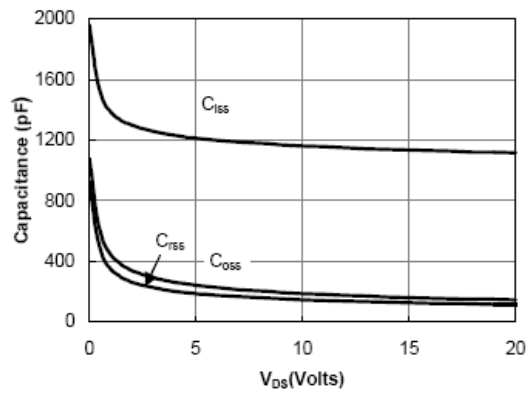


Figure 8: Capacitance Characteristics

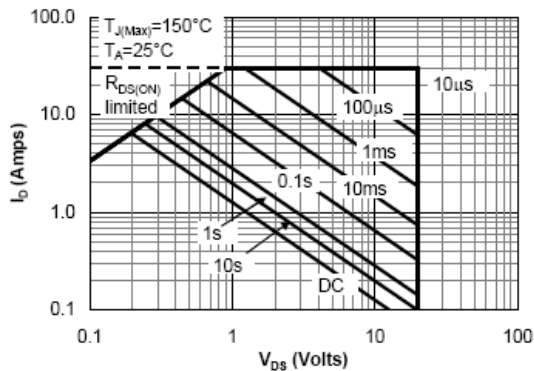


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

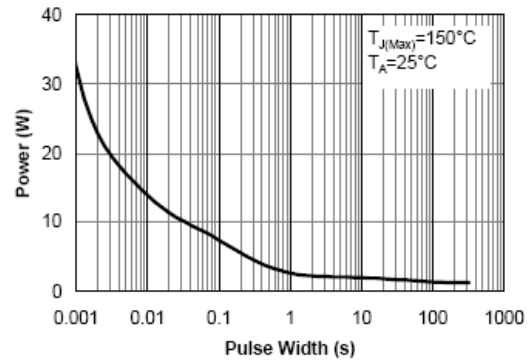


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

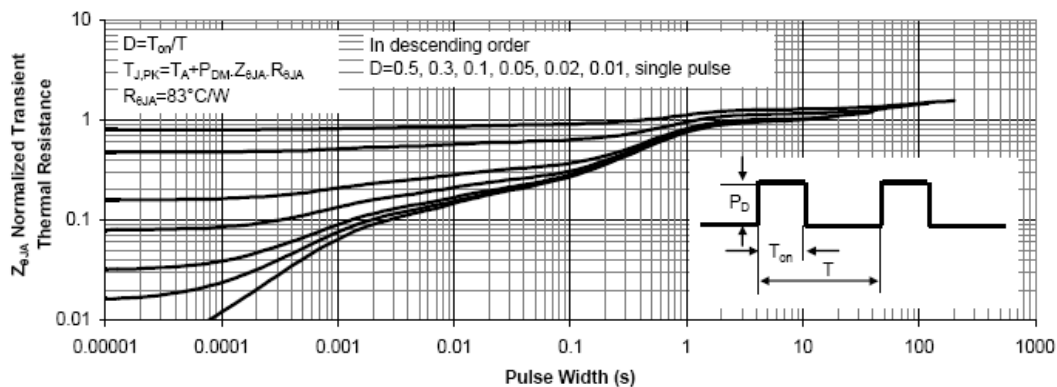


Figure 11: Normalized Maximum Transient Thermal Impedance