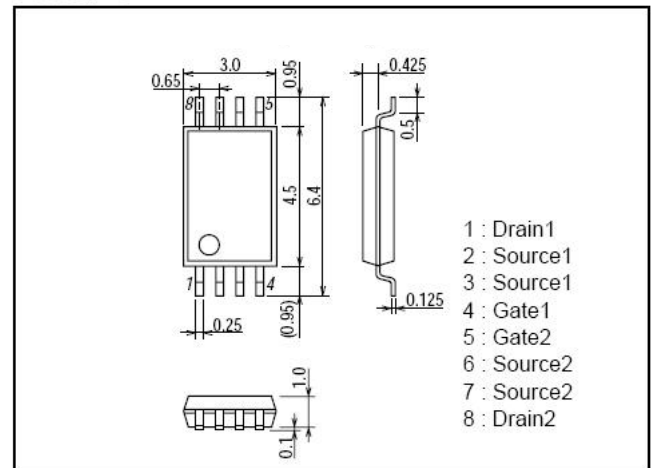


Features

- 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}		± 12	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	$^{\circ}\text{C}$

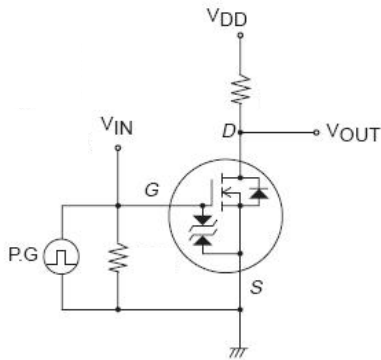
Electrical Characteristics at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=250\mu\text{A}$, $V_{GS}=0\text{V}$	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 10\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	0.5	0.8	1.0	V
Forward Transconductance	g_{FS}	$V_{DS}=5\text{V}$, $I_D=7\text{A}$		31		S
Static Drain-to-Source On-State Resistance	$R_{DS(ON)}$	$I_D=6.6\text{A}$, $V_{GS}=4.5\text{V}$	15	17	22	$\text{m}\Omega$
	$R_{DS(ON)}$	$I_D=5.5\text{A}$, $V_{GS}=2.5\text{V}$	18	21	27	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$	520	650	780	pF
Output Capacitance	C_{oss}	$V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$		140		pF
Reverse Transfer Capacitance	C_{rss}	$V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$		60		pF

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	Typ	max	
Turn-on Delay Time	$t_{d(on)}$	$V_{GS}=10\text{V}, V_{DS}=10\text{V}, R_L=1.5\Omega,$ $R_{GEN}=3\Omega$		0.25		μS
Rise Time	t_r			0.45		μS
Turn-off Delay Time	$t_{d(off)}$			11		μS
Fall Time	t_f			4		μS
Total Gate Charge	Q_g	$V_{DS}=10\text{V}, V_{GS}=10\text{V}, I_D=7\text{A}$	5	6.7	8	nC
Gate-to-Source Charge	Q_{gs}			3.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			3		nC
Diode Forward Voltage	V_{SD}	$I_S=1\text{A}, V_{GS}=0\text{V}$		0.7	1	V

Switching Time Test Circuit



Electrical Connection

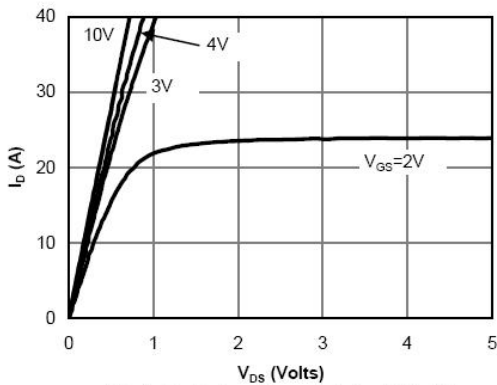
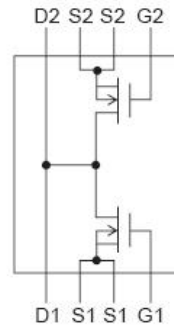


Fig 1: On-Region Characteristics (Note E)

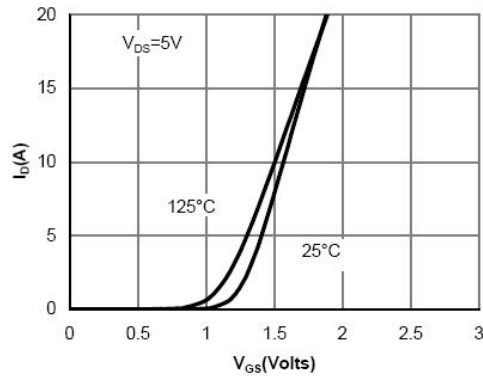


Figure 2: Transfer Characteristics (Note E)

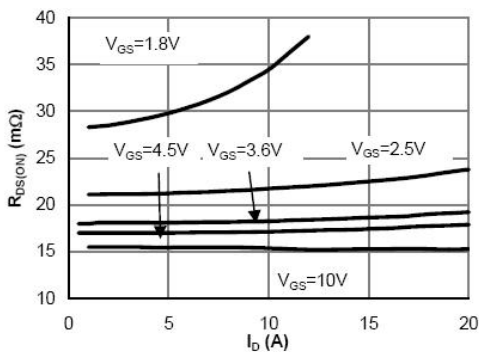


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

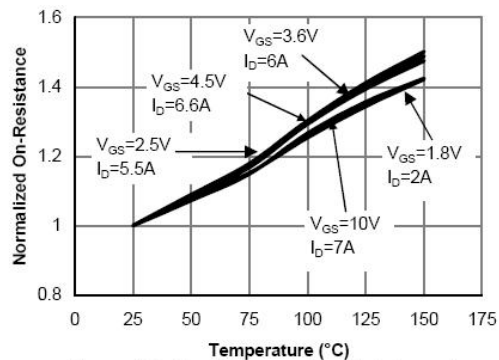


Figure 4: On-Resistance vs. Junction Temperature (Note E)

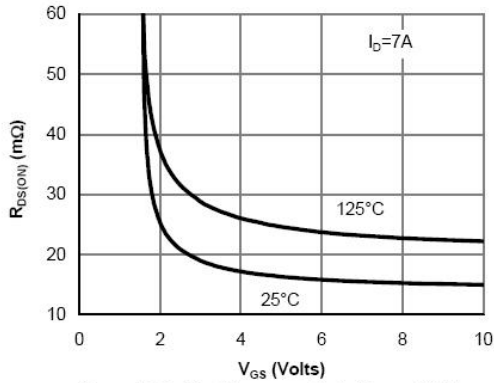


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

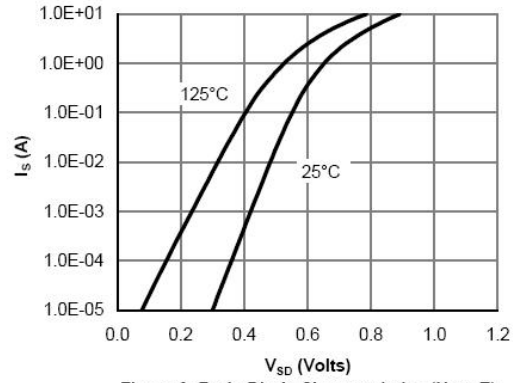


Figure 6: Body-Diode Characteristics (Note E)

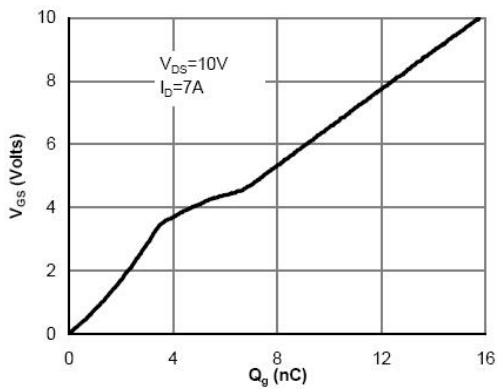


Figure 7: Gate-Charge Characteristics

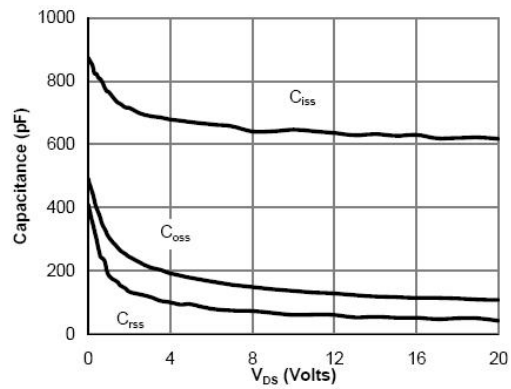


Figure 8: Capacitance Characteristics

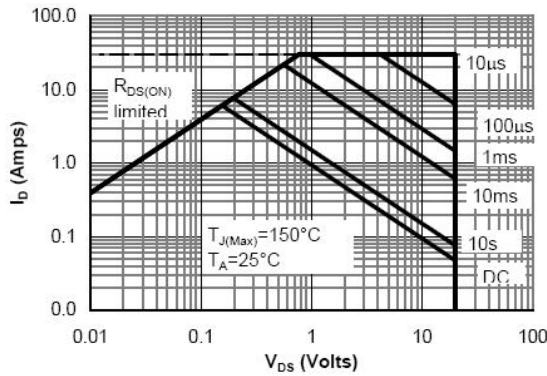


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

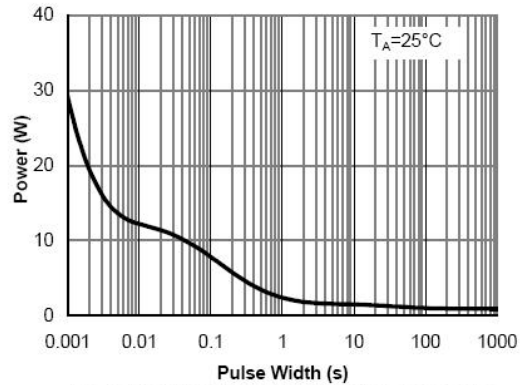


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

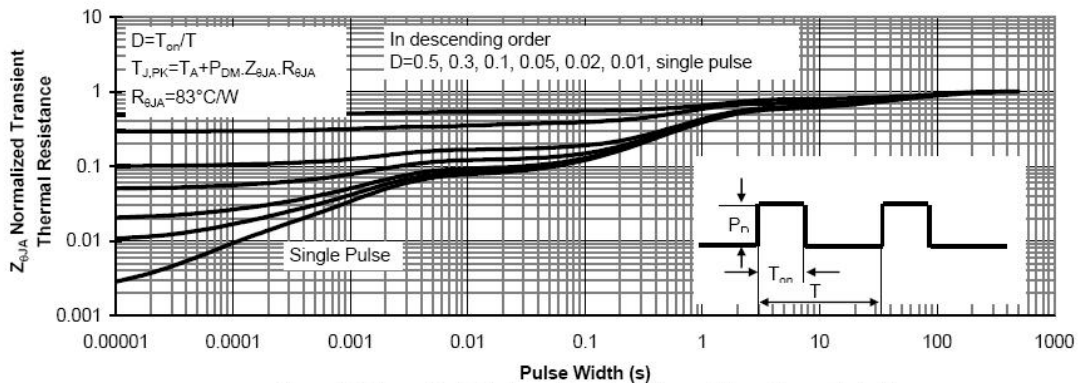


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)