

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	110mΩ@10V	5A

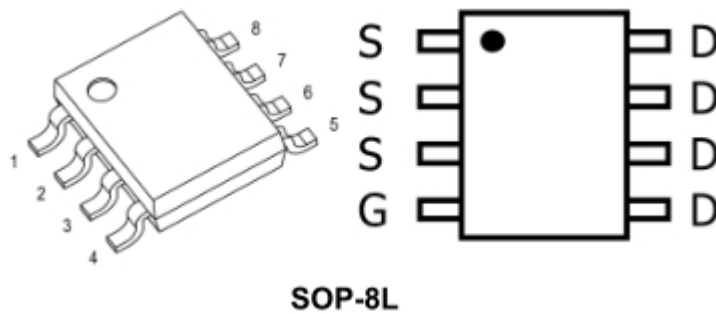
Feature

- V_{DS} 100V
- I_D 5.0A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) < 140 mohm

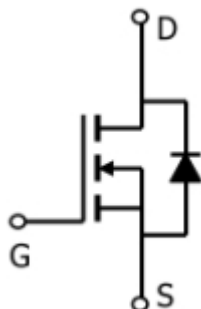
Application

- Consumer electronic power supply
- Motor control
- Synchronous-rectification
- Isolated DC/DC convertor
- Invertors

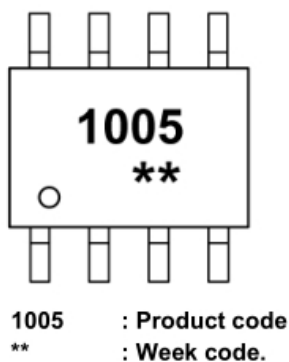
Package



Circuit diagram



Marking



Absolute maximum ratings

($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	5	W
Drain Current – Pulsed ¹	I_{DM}	20	A
Power Dissipation ($T_C=25^{\circ}\text{C}$)	P_D	1.9	W
Thermal Resistance Junction to ambient	$R_{\theta JA}$	65.8	$^{\circ}\text{C}/\text{W}$
Storage Temperature Range	T_{STG}	-55~ +150	$^{\circ}\text{C}$
Operating Junction Temperature Range	T_{JL}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.8	3	V
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			100	μA
Static Drain-Source on-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 3A$		110	140	m Ω
		$V_{GS} = 4.5V, I_D = 2A$		160	300	
Dynamic characteristics ⁴						
Total Gate Charge	Q_g	$V_{GS} = 10V, V_{DS} = 50V, I_D = 3.0A$		4.3		nC
Gate-Source Charge	Q_{gS}			1.5		
Gate-Drain Charge	Q_{gd}			1.1		
Turn-On Delay Time	$T_{d(on)}$	$V_{GS} = 10V, V_{DD} = 50V, I_D = 3.0A, R_{GEN} = 2\Omega$		14.7		nS
Rise Time	T_r			3.5		
Turn-Off Delay Time	$T_{d(off)}$			20.9		
Fall Time	T_f			2.7		
Input Capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$		206		pF
Output Capacitance	C_{oss}			29		
Reverse Transfer Capacitance	C_{rss}			1.4		
Drain-Source Diode Characteristics						
Continuous Source Current	I_s	$V_G = V_D = 0V$, Force Current			5	A
Diode forward voltage	V_{SD}	$V_{GS} = 0V, I_s = 3A$, $T_J = 25^{\circ}C$			1.2	V

Typical Characteristics

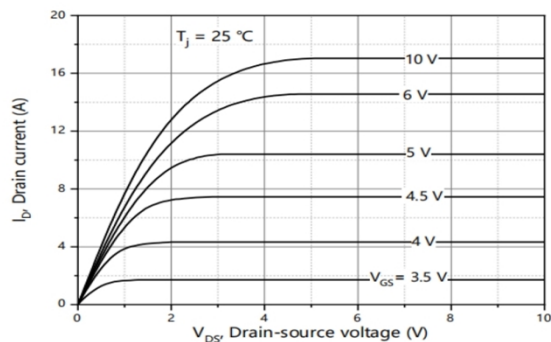


Figure1. Output Characteristics

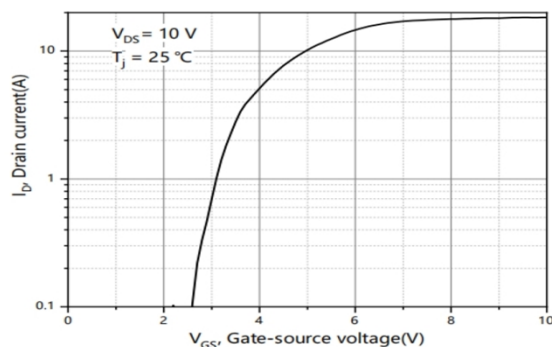


Figure2. Transfer Characteristics

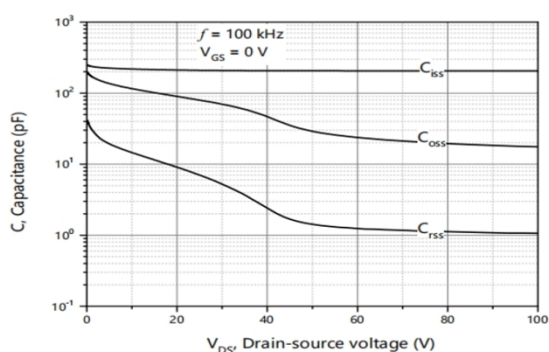


Figure3. Capacitance Characteristics

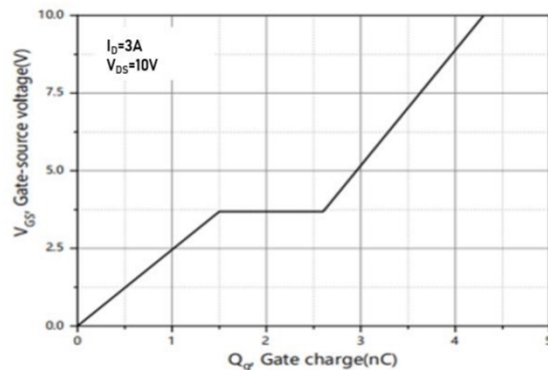


Figure4. Gate Charge

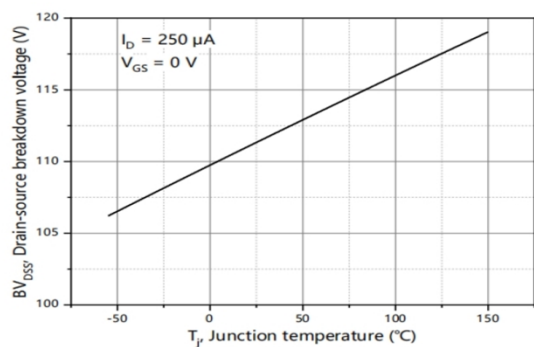


Figure5. Drain-Source breakdown voltage

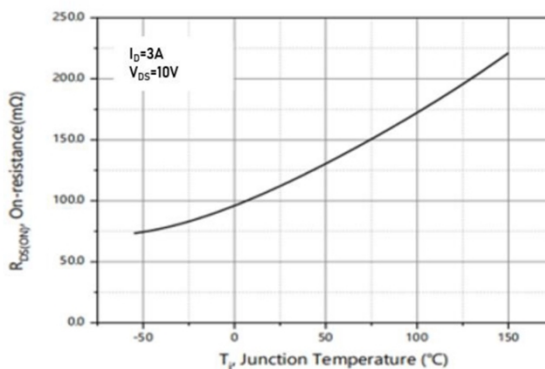


Figure6. Drain-Source on Resistance

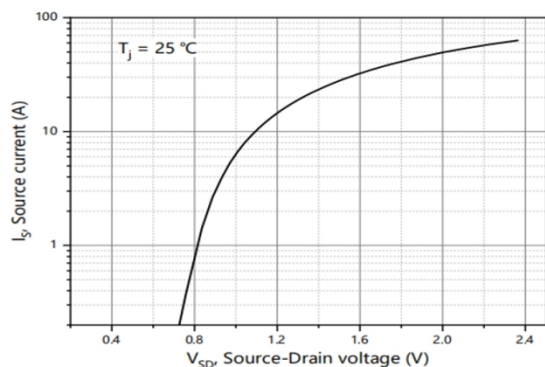


Figure7. Forward characteristic of body diode

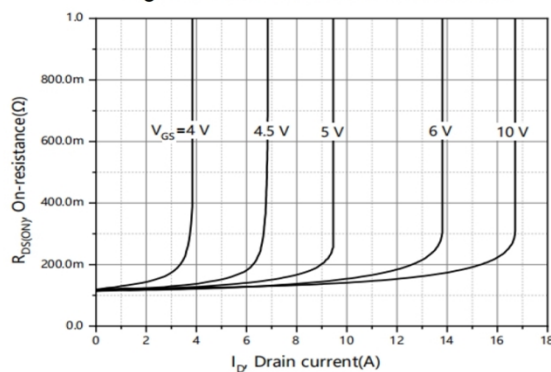


Figure8. Drain-source on-state resistance

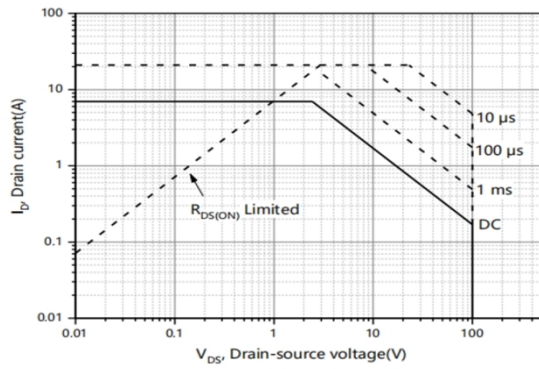
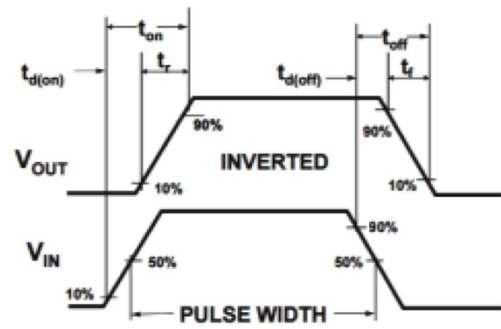
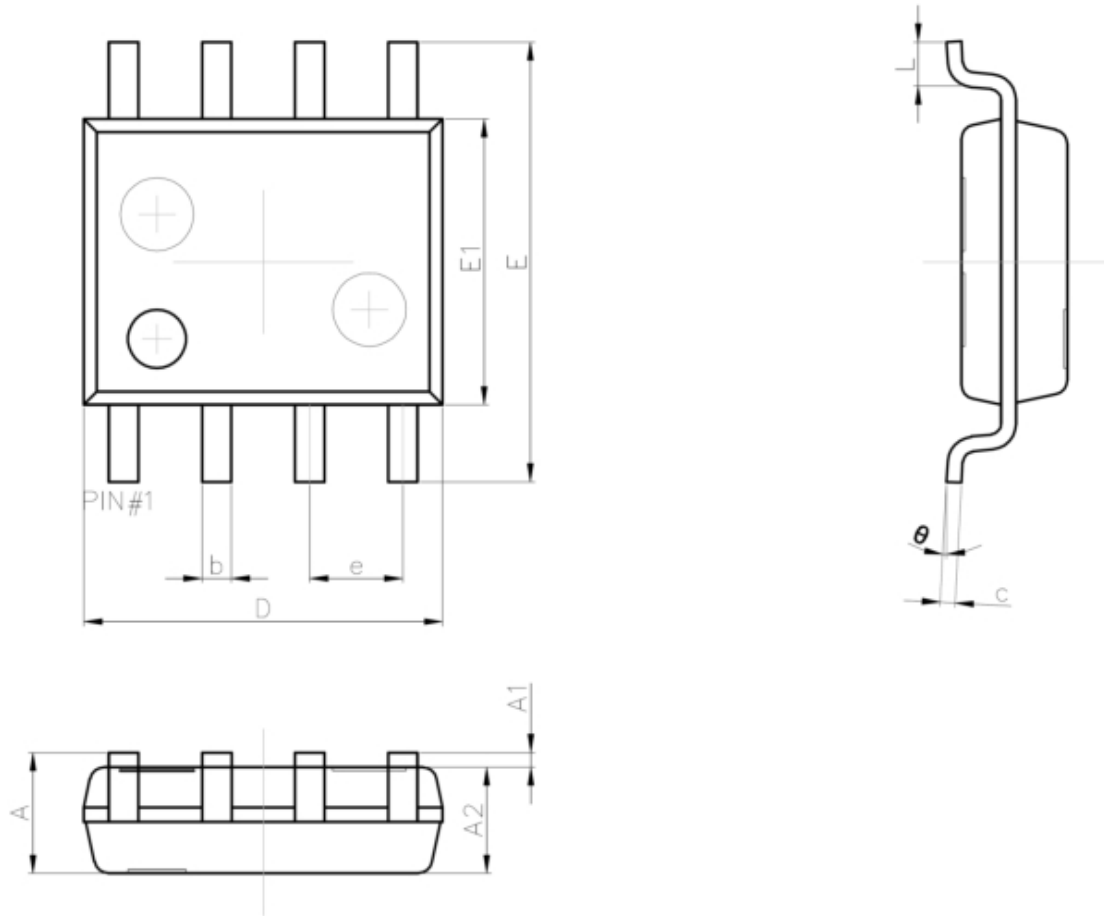

Figure9. Safe Operation Area $T_A=25^\circ\text{C}$


Figure10. Switching wave

SOP-8 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.35	1.75
A1	0.10	0.25
A2	1.35	1.55
b	0.33	0.51
c	0.17	0.25
D	4.80	5.00
e	1.27 REF.	
E	5.80	6.20
E1	3.80	4.00
L	0.40	1.27
θ	0°	8°