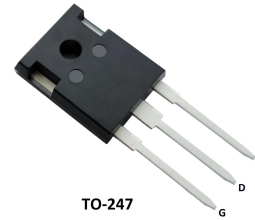


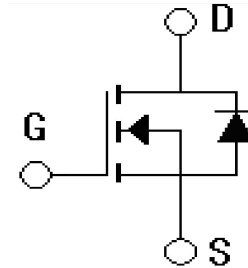
Features

- $V_{DS}=1200V, I_D=12A$
 $R_{DS(on)} < 1.5\Omega @ V_{GS}=10V$
- High density cell design for ultra low R_{Dson}
- Low gate charge
- Improved dv/dt capability
- RoHS product



Applications

- High Voltage Switched-mode and resonant-mode power supplies
- High Voltage Pulse Power Applications
- High Voltage Discharge circuits in Lasers Pulsers, Spark Igniters, RF Generators
- High Voltage DC-DC converters
- High Voltage DC-AC inverters



Absolute Ratings ($T_C=25^\circ C$)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DSS}	1200	V
Gate-Source Voltage	V_{GSS}	± 30	V
Drain Current-continuous	I_D	12	A
Drain Current-pulse (note1)	I_{DM}	30	A
Single Pulsed Avalanche Energy (note2)	E_{AS}	173	mJ
Maximum Power Dissipation	PD $T_C=25^\circ C$ Derate above $25^\circ C$	750	W
		5	W/ $^\circ C$
Operating and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$

Electrical Characteristics ($T_{CASE}=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	BV_{DSS}	$I_D=1mA, V_{GS}=0V$	1200	-	-	V

Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	0.02	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	± 100	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	4	-	5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=1A$	-	1.1	1.5	Ω
Forward Transconductance	g_{fs}	$V_{DS}=20V, I_D=6A$ (note3)	-	16	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0MHz$	-	3180	-	pF
Output capacitance	C_{oss}		-	234	-	pF
Reverse transfer capacitance	C_{rss}		-	19	-	pF

Electrical Characteristics ($T_{CASE}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Switching-Characteristics						
Turn-On delay time	$t_{d(on)}$	$V_{DS}=600V, I_D=6A,$ $R_G=25\Omega, V_{GS}=10V$ (note3,4)	-	65	-	ns
Turn-On rise time	t_r		-	58	-	ns
Turn-Off delay time	$t_{d(off)}$		-	156	-	ns
Turn-Off rise time	t_f		-	51	-	ns
Total Gate Charge	Q_g	$V_{DS}=600V, I_D=6A,$ $V_{GS}=10V$ (note3,4)	-	66	-	nC
Gate-Source charge	Q_{gs}		-	27	-	nC
Gate-Drain charge	Q_{gd}		-	24	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Current	I_{SD}	$V_{GS}=0V, I_S=12A$	0.5	-	1.2	V
Diode Forward Current	I_S	$TC=25^{\circ}C$	-	-	12	A
Reverse recovery time	T_{rr}	$I_S=6A, di/dT=100A/\mu S$ $VR=100V, V_{GS}=0V$ (note4)	-	0.6	-	μS
Reverse recovery charge	Q_{rr}		-	5.7	-	μC

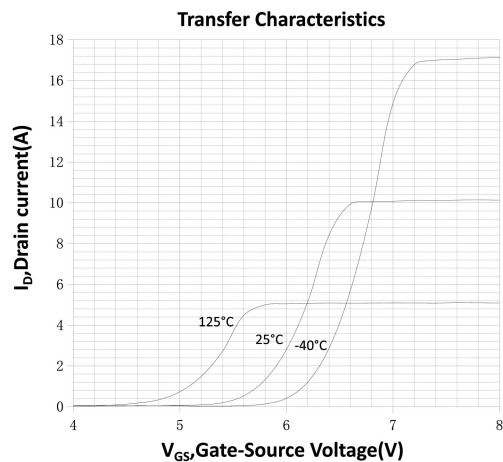
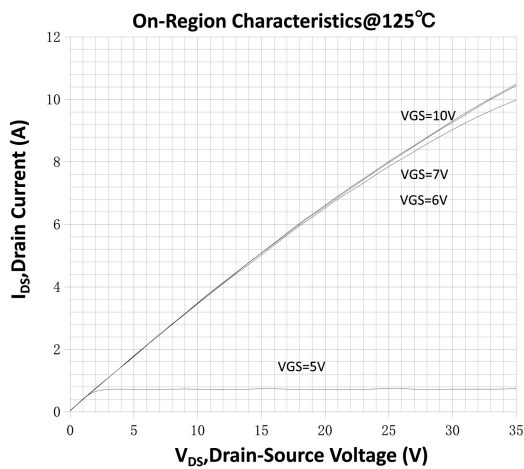
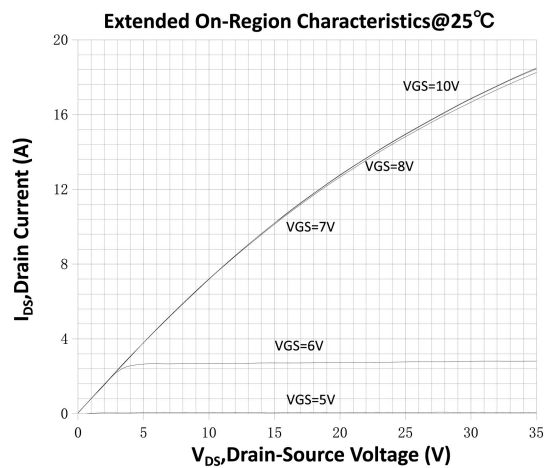
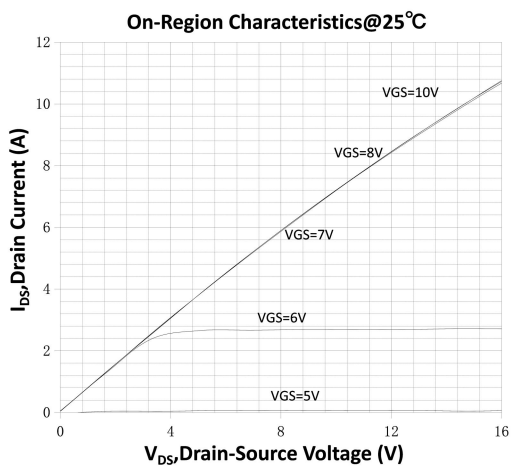
Thermal Characteristic

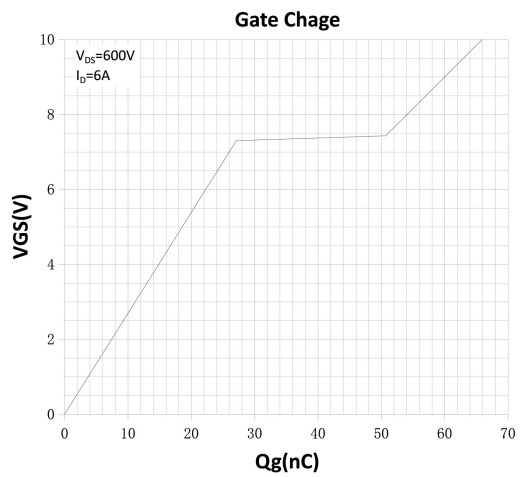
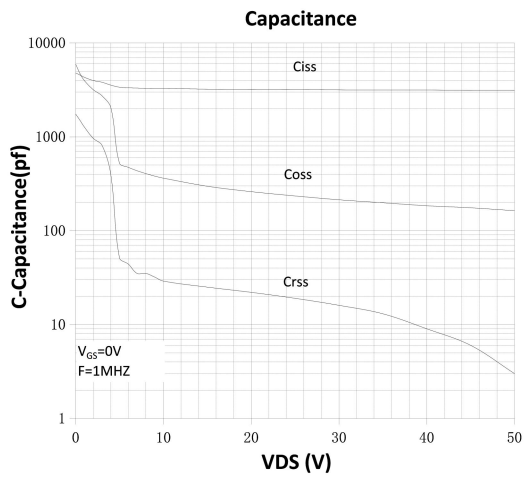
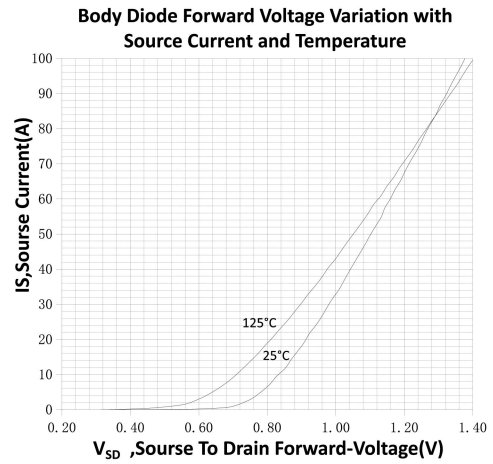
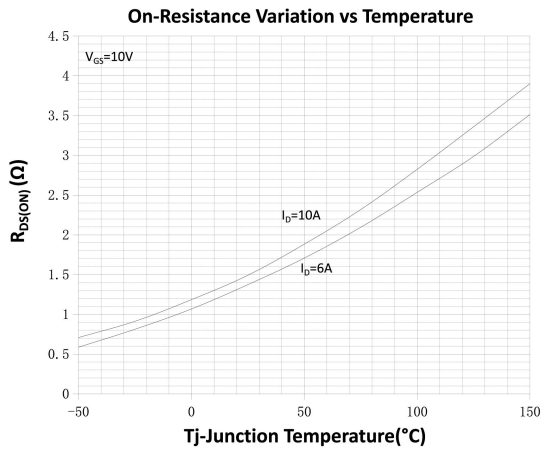
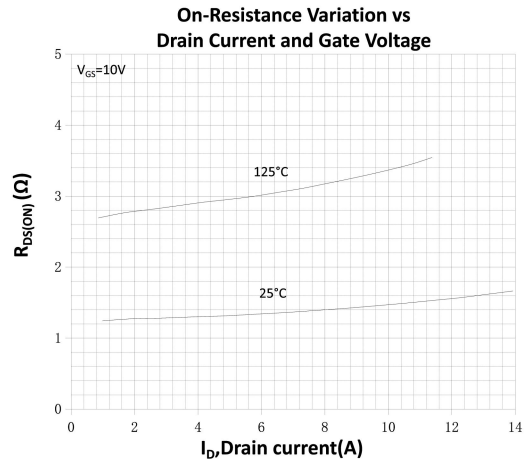
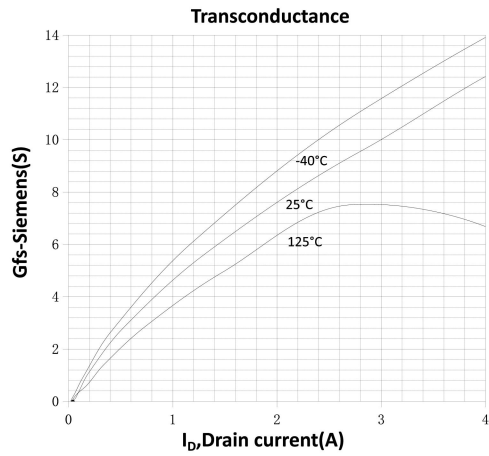
Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.2	$^{\circ}C/W$
Thermal Resistance, junction to ambient	$R_{th(j-A)}$	36	$^{\circ}C/W$

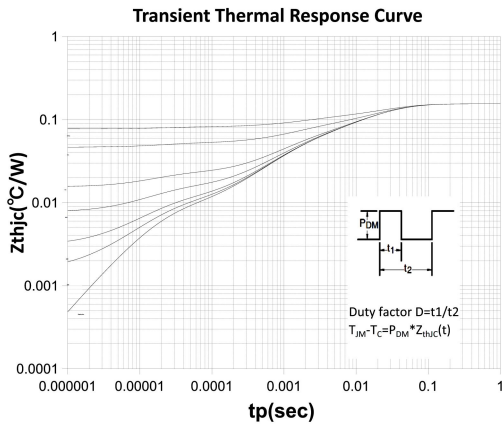
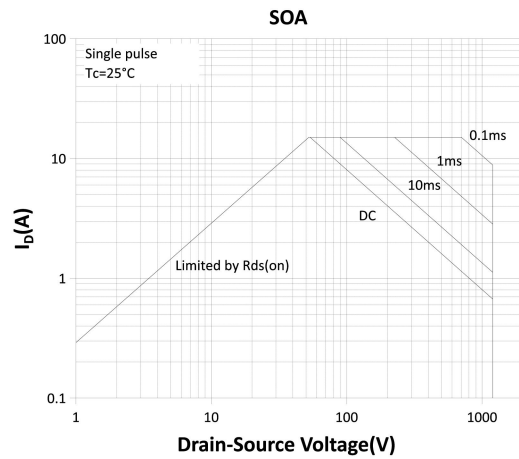
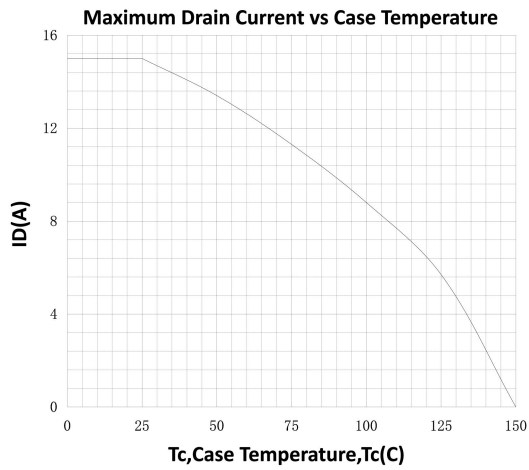
Notes:

1. Repetitive Rating : Pulse width limited by maximum junction temperature
2. $L = 9.6 \text{ mH}$, $I_{AS} = 6 \text{ A}$, $V_{DD} = 50\text{V}$, $R_G = 25 \Omega$, Starting $T_J = 25^{\circ}C$
3. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$
4. Essentially independent of operating temperature

Electrical Characteristics







Package Mechanical DATA

