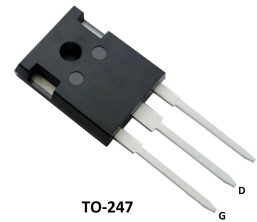


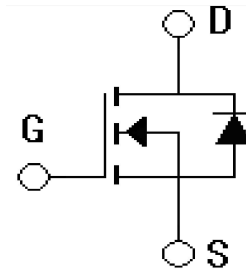
## Features

- $V_{DS}=1500V, I_D=12A$   
 $R_{DS(on)} < 1.8\Omega @ V_{GS}=10V$
- 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	$V_{DSS}$	1500	V
Gate-Source Voltage	$V_{GSS}$	$\pm 30$	V
Drain Current-continuous	$I_{D,25^\circ C}$ $100^\circ C$	12	A
		8	
Drain Current-pulse(note1)*	$I_{DM}$	22	A
Single Pulsed Avalanche Energy (note2)	$E_{AS}$	607	mJ
Maximum Power Dissipation	PD TC=25°C Derate above 25°C	860	W
		6.8	W/°C
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	°C
Maximum lead Storage Temperature Range Purposes	TL	300	°C

\*Drain current limited by maximum junction temperature

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	$BV_{DSS}$	$I_D=1mA, V_{GS}=0V$	1500	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	-	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	$\pm 100$	nA
<b>On-Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	-	5.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=1A$	-	1.3	1.8	$\Omega$
Forward Transconductance	$g_{fs}$	$V_{DS}=20V, I_D=6A$ (note3)	-	17	-	S
<b>Dynamic Characteristics</b>						
Input capacitance	$C_{iss}$	$V_{DS}=10V, V_{GS}=0V,$ $f=1.0MHZ$	-	4874	-	pF
Output capacitance	$C_{oss}$		-	310	-	pF
Reverse transfer capacitance	$C_{rss}$		-	20	-	pF
Total Gate Charge	$Q_g$	$V_{DS}=750V, I_D=6A,$ $V_{GS}=10V$ (note3,4)		97		nC
Gate-Source Charge	$Q_{gs}$			34		nC
Gate-Drain Charge	$Q_{gd}$			35		nC

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
<b>Switching-Characteristics</b>						
Turn-On delay time	$t_{d(on)}$	$V_{DS}=750V, I_D=6A,$ $V_{GS}=10V$ (note3,4)	-	118	-	ns
Turn-On rise time	$t_r$		-	73	-	ns
Turn-Off delay time	$t_{d(off)}$		-	260	-	ns
Turn-Off rise time	$t_f$		-	64	-	ns
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						

Maximum Continuous Drain-Source Diode Forward Current	$V_{SD}$	$V_{GS}=0V, I_S=12A$	0.5	-	1.2	V
Diode Forward Current	$I_S$	$TC=25^{\circ}C$	-	-	12	A
Reverse recovery time	$T_{rr}$	$I_S=6A, dI/dT=100A/\mu S$ $VR=100V, VGS=0V$ (note4)	-	0.37	-	$\mu S$
Reverse Recovery Charge	$Q_{rr}$			3.28		$\mu C$

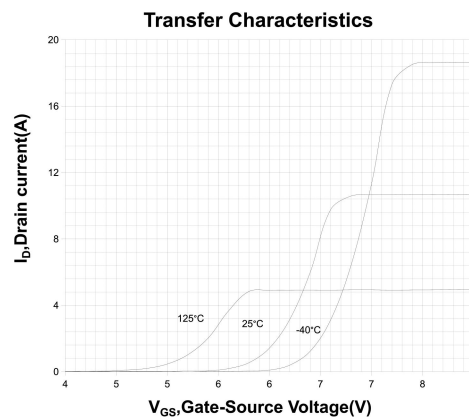
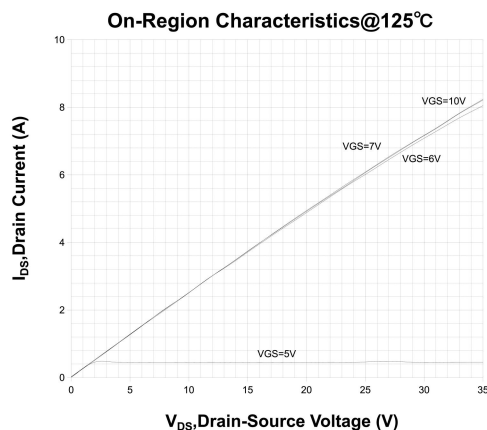
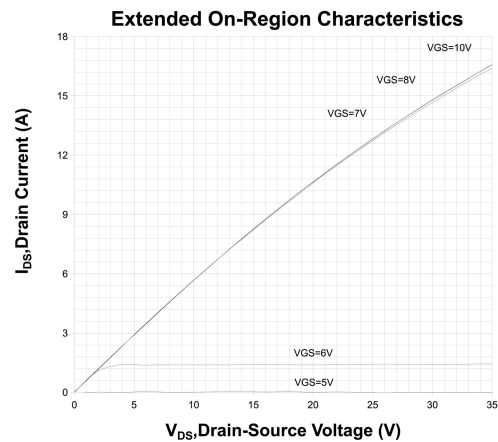
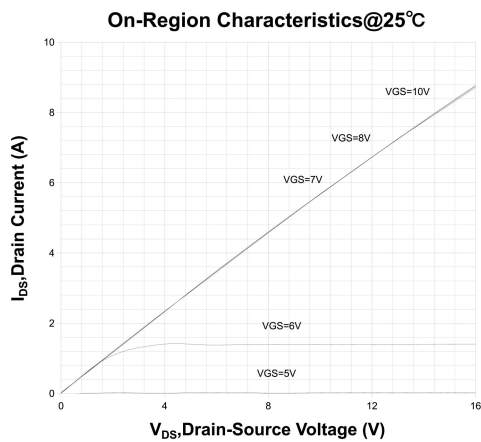
## Thermal Characteristic

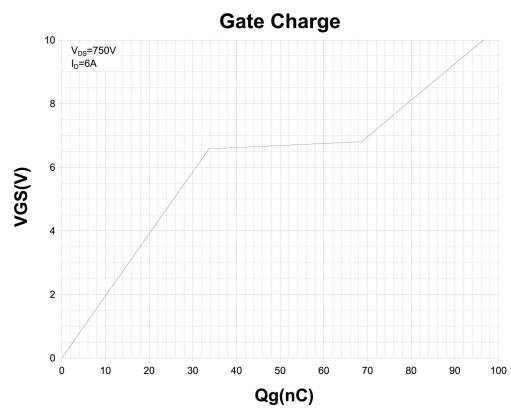
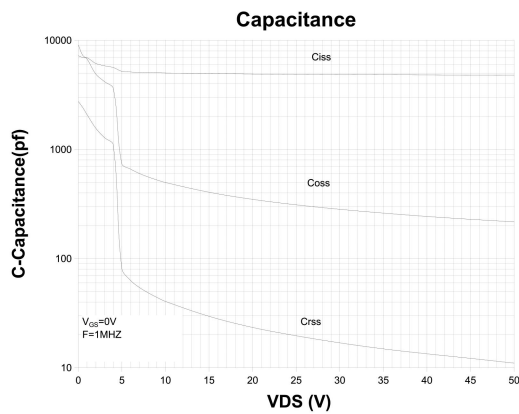
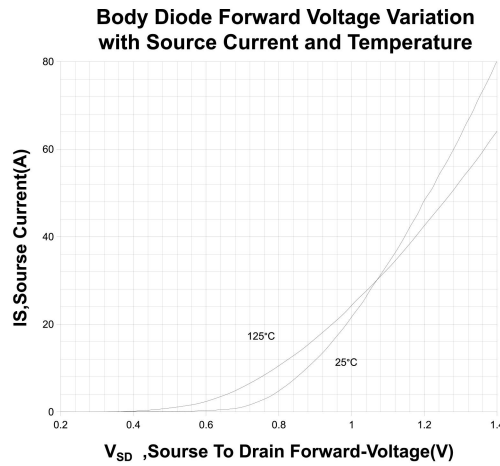
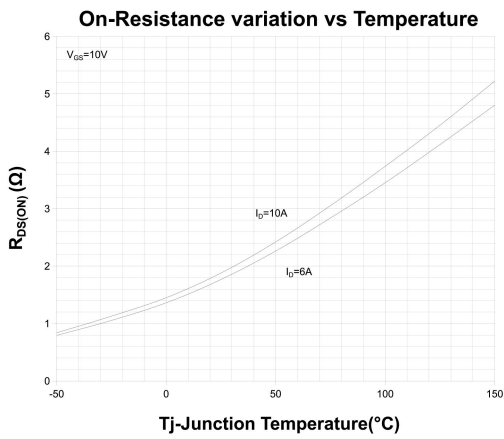
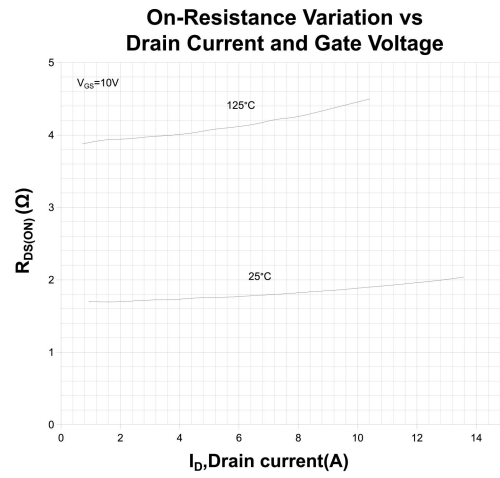
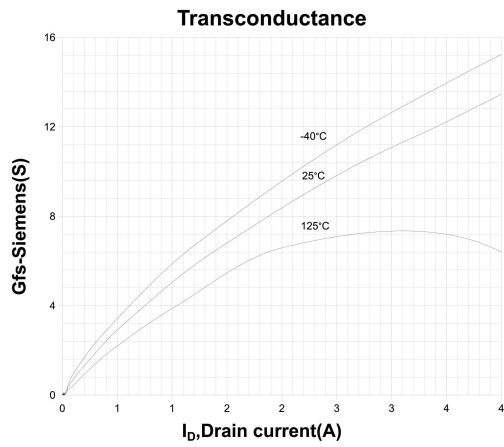
Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.18	$^{\circ}C/W$
Thermal Resistance, junction to ambient	$R_{th(j-A)}$	36	$^{\circ}C/W$

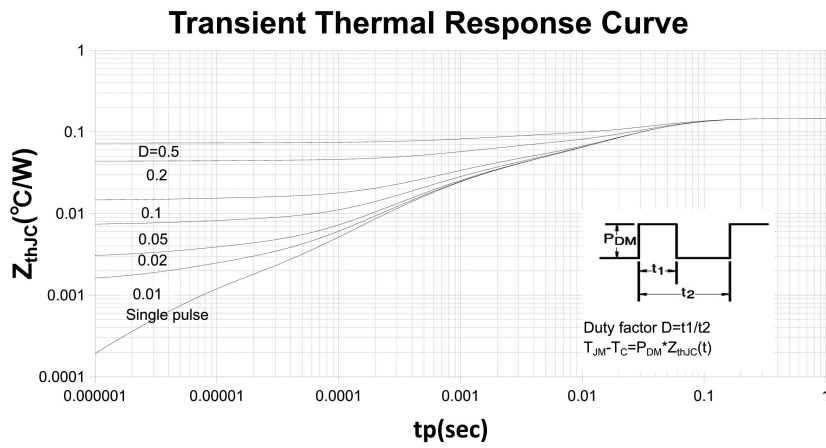
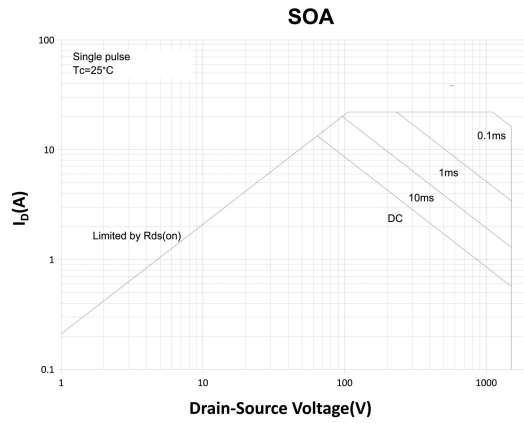
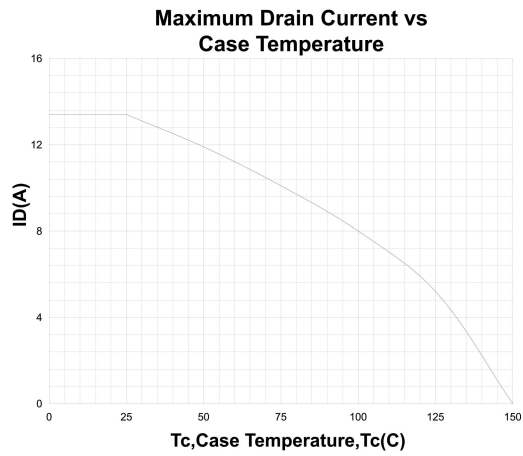
Notes:

1. Repetitive Rating : Pulse width limited by maximum junction temperature
2.  $L = 15\text{ mH}$ ,  $I_{AS} = 9\text{ A}$ ,  $V_{DD} = 50\text{ V}$ ,  $R_G = 25\ \Omega$ , Starting  $T_J = 25^{\circ}C$
3. Pulse Test : Pulse width  $\leq 300\mu s$ , Duty cycle  $\leq 2\%$
4. Essentially independent of operating temperature

## Electrical Characteristics







## Package Mechanical DATA

