V_{DS}	=	1700 V
$R_{DS(on)}$	=	650 mΩ
I_D@25℃	=	7.0 A

Features

- High Blocking Voltage with Low On-Resistance
- High Speed Switching with Low Capacitance
- Easy to Parallel and Simple to Drive
- Ultra-low Drain-gate capacitance

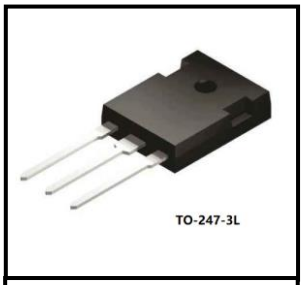
Benefits

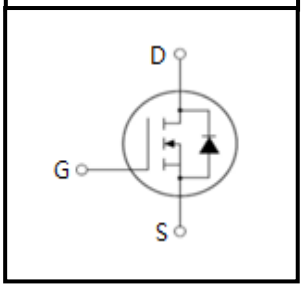
- Higher System Efficiency
- Reduced Cooling Requirements
- Increased System Reliability
- Increased System Switching Frequency

Applications

- Auxiliary Power Supplies
- Switch Mode Power Supplies
- High-voltage Capacitive

Package





Maximum Ratings (T_C=25℃ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{DSmax}	Drain-Source Voltage	1700	V	V_{GS}=0V, I_D=100μA	
V_{GSmax}	Gate-Source Voltage	-10/+25	V	Absolute maximum values	
V_{GSop}	Gate-Source Voltage	-5/+20	V	Recommended operational values	
I_D	Continuous Drain Current	7.0	A	V_{GS}=20V, T_c=25℃	
		4.5		V_{GS}=20V, T_c=100℃	
$I_{D(pulse)}$	Pulsed Drain Current	9.0	A	Pulse width t_p limited by T_{Jmax}	
P_D	Power Dissipation	62	W	T_c=25℃, T_J=150℃	
T_J, T_{STG}	Operating Junction and Storage Temperature	-55 to +150	℃		

Electrical Characteristics (T_C=25℃ unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions	Note
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	1700	/	/	V	V_{GS}=0V, I_D=100μA	
$V_{GS(th)}$	Gate Threshold Voltage	2.0	2.6	4.0	V	V_{DS}=V_{GS}, I_D=1.0mA	Fig. 11
		/	1.8	/		V_{DS}=V_{GS}, I_D=1.0mA, T_J=150℃	
I_{DSS}	Zero Gate Voltage Drain Current	/	1	100	μA	V_{DS}=1700V, V_{GS}=0V	
I_{GSS+}	Gate-Source Leakage Current	/	10	250	nA	V_{DS}=0V, V_{GS}=25V	
I_{GSS-}	Gate-Source Leakage Current	/	10	250	nA	V_{DS}=0V, V_{GS}=-10V	
$R_{DS(on)}$	Drain-Source On-State Resistance	/	650	850	mΩ	V_{GS}=20V, I_D=2.0A	
		/	1300	/		V_{GS}=20V, I_D=2.0A, T_J=150℃	
g_{fs}	Transconductance	/	1.06	/	S	V_{DS}=20 V, I_D=2.0 A	Fig. 4,5,6
		/	1.14	/		V_{DS}=20V, I_D=2.0A, T_J=150℃	
C_{iss}	Input Capacitance	/	194	/	pF	V_{GS}=0V V_{DS}=1000V f=1MHz	Fig. 15,16
C_{oss}	Output Capacitance	/	13	/			
C_{rss}	Reverse Transfer Capacitance	/	1.8	/			
E_{oss}	C_{oss} Stored Energy	/	6.6	/	μJ	V_{AC}=25mV	
E_{ON}	Turn-On Switching Energy	/	5	/	mJ	V_{DS}=1200V, V_{GS}=-5V/20V	
E_{OFF}	Turn-Off Switching Energy	/	9.2	/		I_D=2.0A, $R_{G(ext)}$=2.5Ω, L=100μH	
$t_{d(on)}$	Turn-On Delay Time	/	13.8	/	ns	V_{DS}=1200V, V_{GS}=-5V/20V, I_D=2.0A $R_{G(ext)}$=2.5Ω, R_L=20Ω	
t_r	Rise Time	/	22.8	/			
$t_{d(off)}$	Turn-Off Delay Time	/	38	/			
t_f	Fall Time	/	14	/			
$R_{G(int)}$	Internal Gate Resistance	/	18	/	Ω	f=1MHz, V_{AC}=25mV	
Q_{GS}	Gate to Source Charge	/	5.4	/	nC	V_{DS}=1200V V_{GS}=-5V/20V I_D=2.0A	
Q_{GD}	Gate to Drain Charge	/	7.6	/			
Q_G	Total Gate Charge	/	23	/			

Reverse Diode Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_{SD}	Diode Forward Voltage	4.2	/	V	V_{GS}=-5V, I_{SD}=25A	Fig. 8,9,10
		3.9	/		V_{GS}=-5V, I_{SD}=25A, T_J=150℃	
I_S	Continuous Diode Forward Current	/	7.0	A	T_C=25℃	
t_{rr}	Reverse Recover Time	25	/	ns	V_R=1200V, I_{SD}=2.0A	
Q_{rr}	Reverse Recovery Charge	15	/	nC		
I_{rrm}	Peak Reverse Recovery Current	2.8	/	A		

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
$R_{θJC}$	Thermal Resistance from Junction to Case	1.8	/	℃/W		
$R_{θJA}$	Thermal Resistance from Junction to Ambient	/	40			

Typical Performance

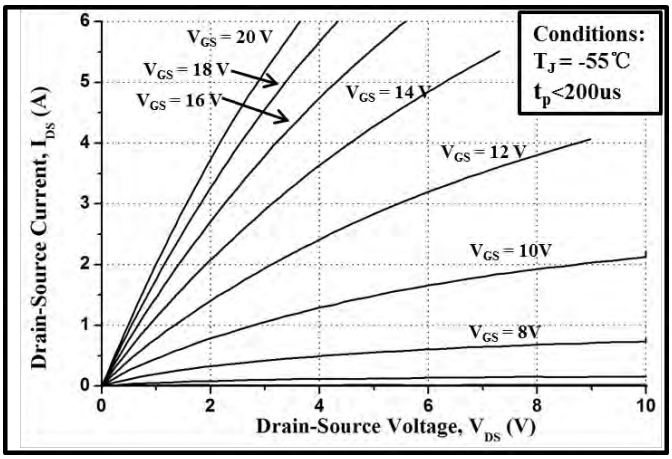


Figure 1. Output Characteristics T_J = -55 ºC

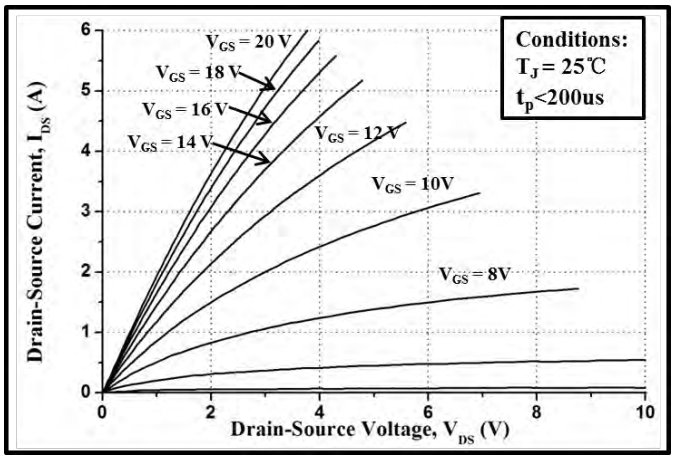


Figure 2. Output Characteristics T_J = 25 ºC

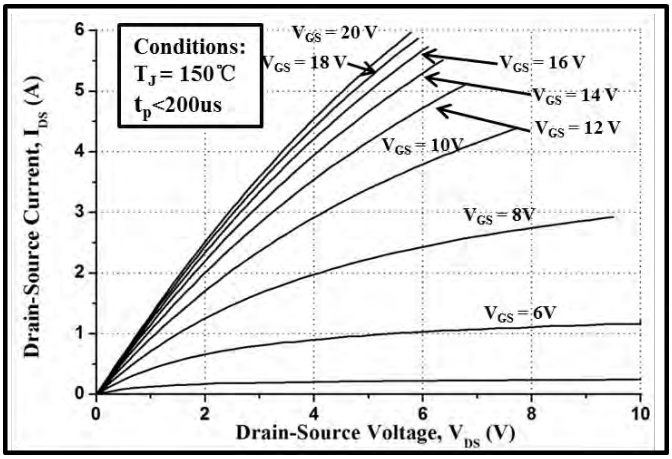


Figure 3. Output Characteristics T_J = 150 ºC

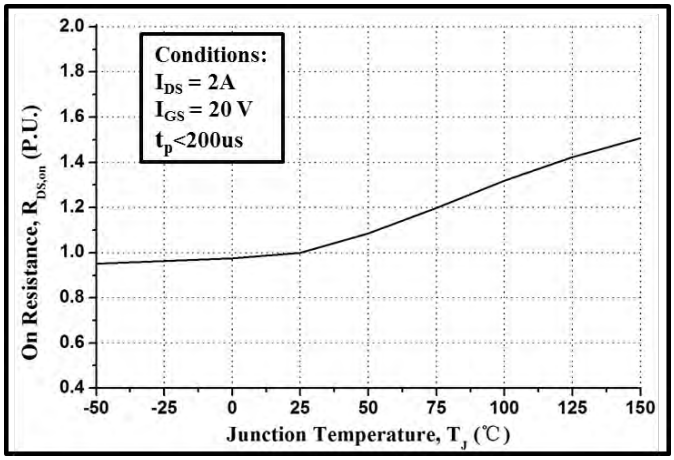


Figure 4. Normalized On-Resistance vs. Temperature

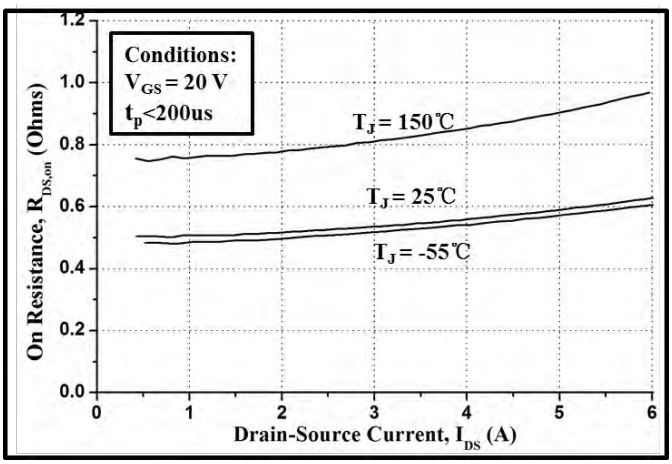


Figure 5. On-Resistance vs. Drain Current
For Various Temperatures

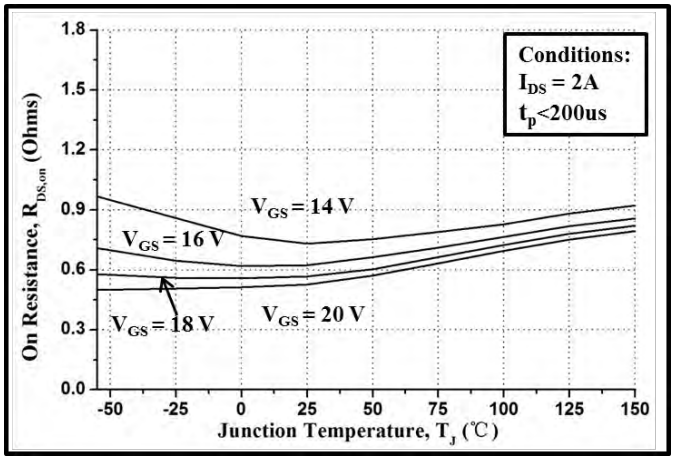


Figure 6. On-Resistance vs. Temperature
For Various Gate Voltage

Typical Performance

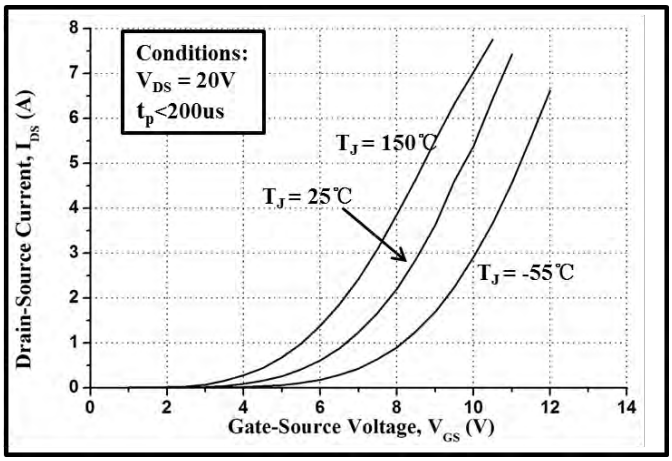


Figure 7. Transfer Characteristic for Various Junction Temperatures

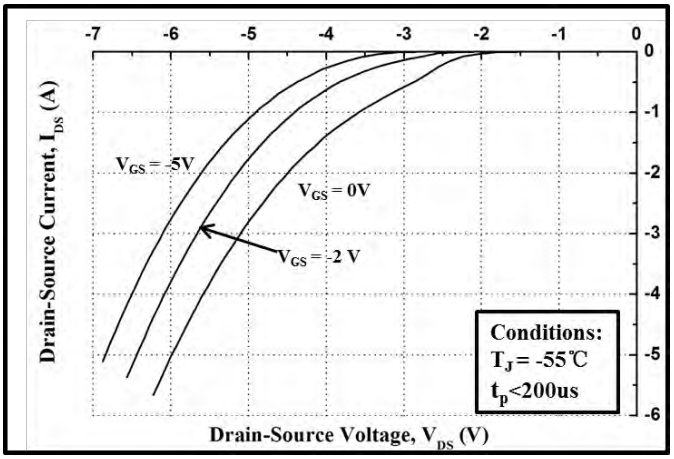


Figure 8. Body Diode Characteristic at -55 ºC

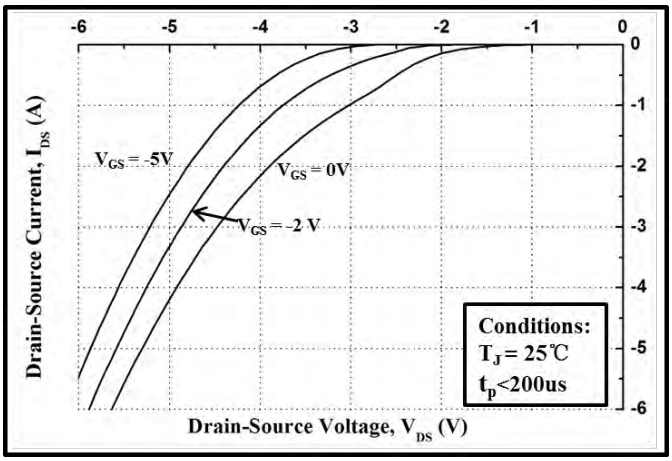


Figure 9. Body Diode Characteristic at 25 ºC

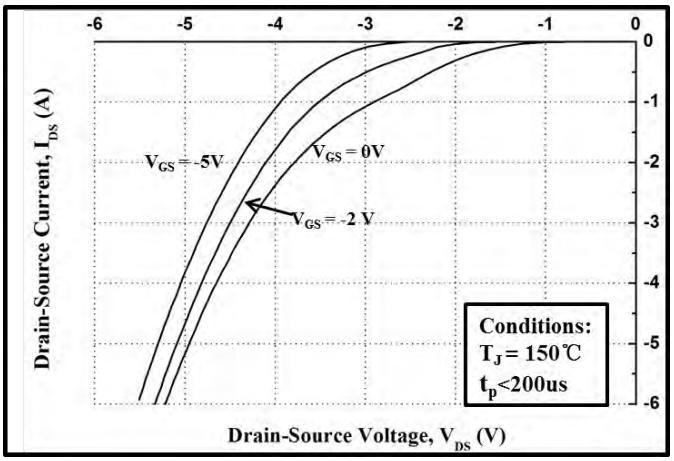


Figure 10. Body Diode Characteristic at 150 ºC

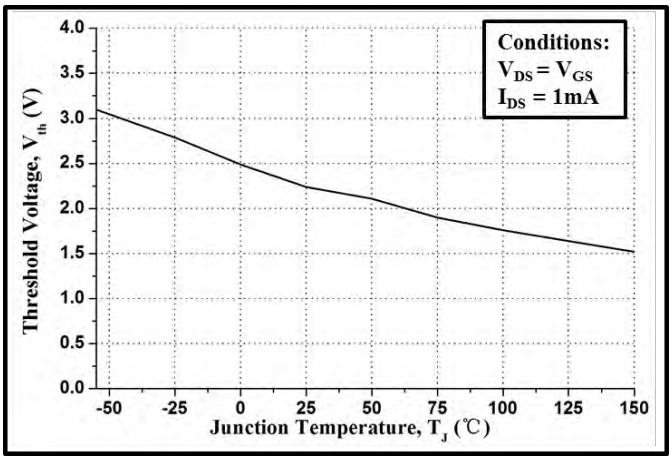


Figure 11. Threshold Voltage vs. Temperature

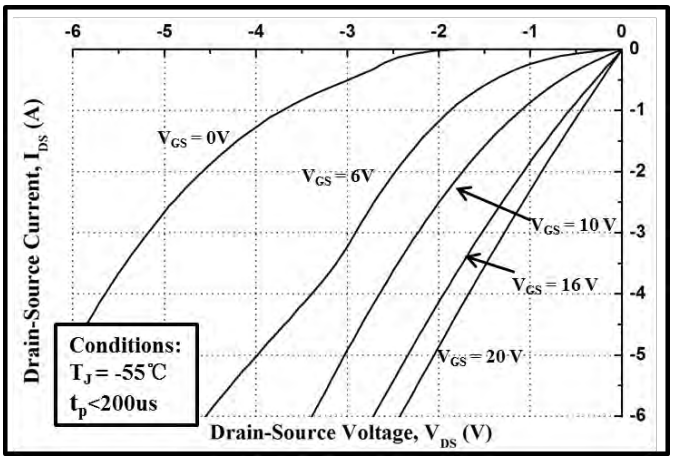


Figure 12. 3rd Quadrant Characteristic at -55 ºC

Typical Performance

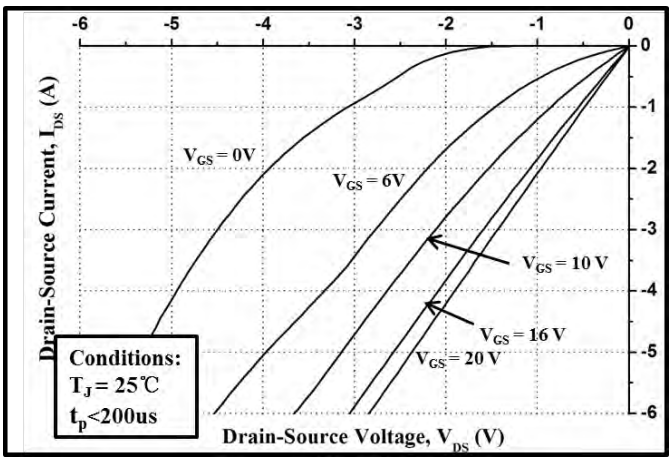


Figure 13. 3rd Quadrant Characteristic at 25 ºC

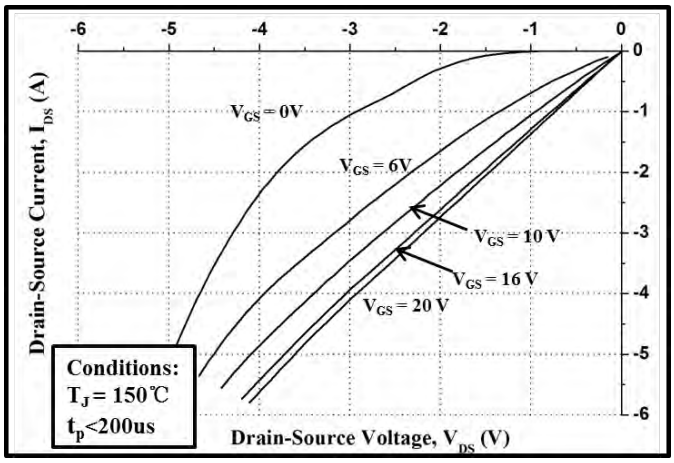


Figure 14. 3rd Quadrant Characteristic at 150 ºC

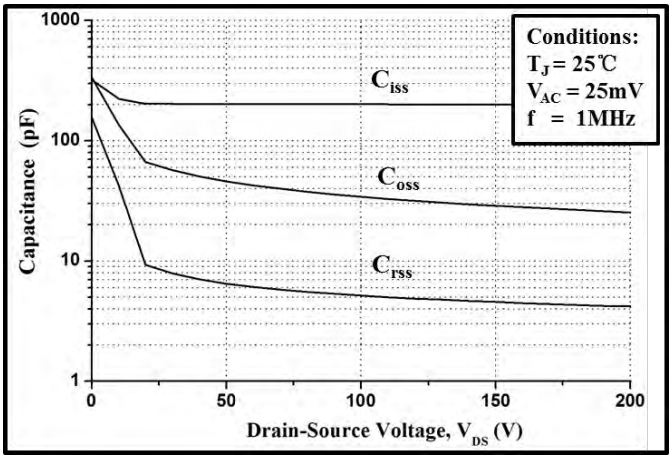


Figure 15. Capacitances vs. Drain-Source Voltage (0 - 200V)

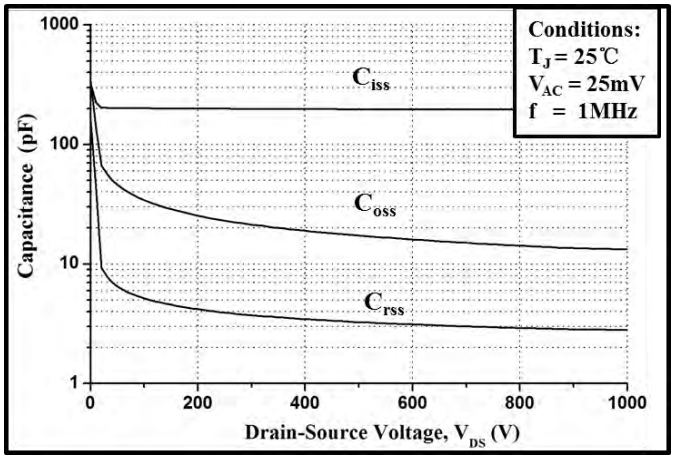


Figure 16. Capacitances vs. Drain-Source Voltage (0 - 1000V)

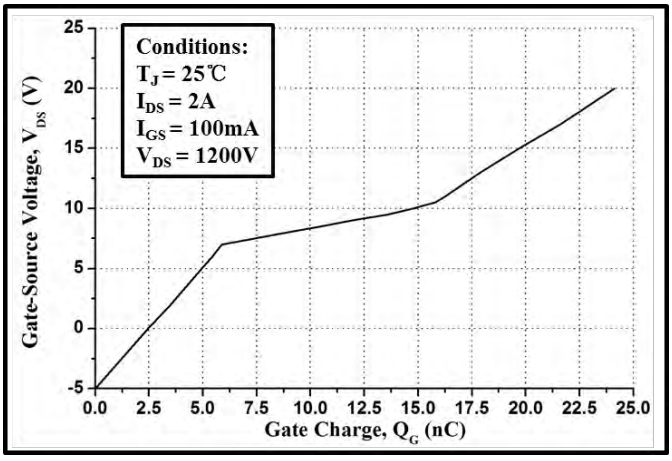


Figure 17. Gate Charge Characteristic

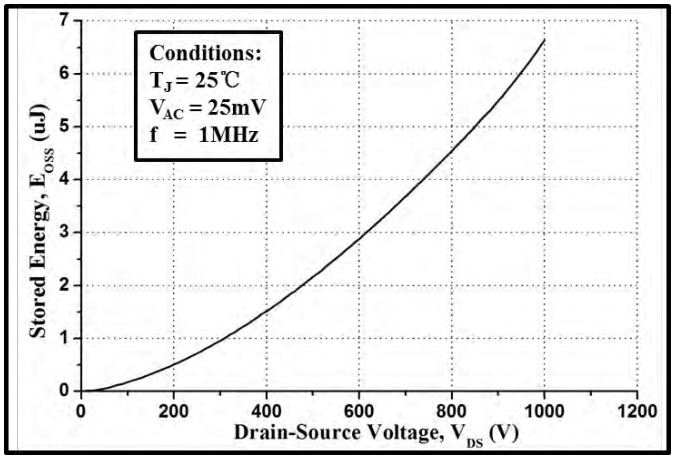
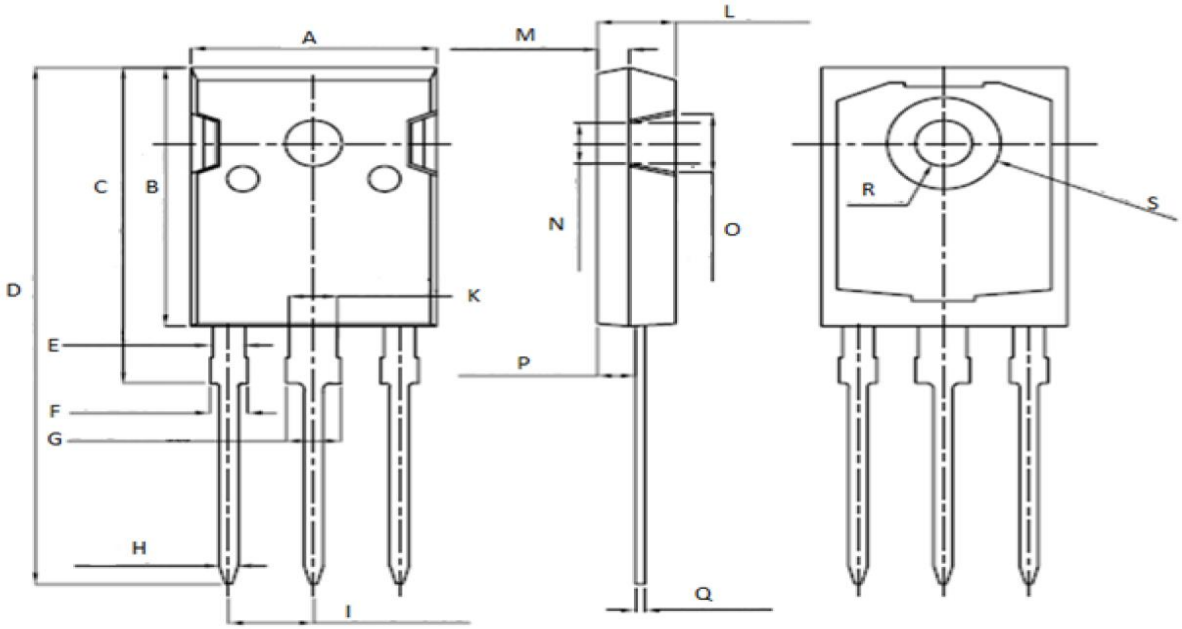


Figure 18. Output Capacitor Stored Energy

Package Dimensions

Package TO-247-3



Unit: mm		
Symbol	Min.	Max.
A	15.95	16.25
B	20.85	21.25
C	20.95	21.35
D	40.5	40.9
E	1.9	2.1
F	2.1	2.25
G	3.1	3.25
H	1.1	1.3
I	5.40	5.50

Unit: mm		
Symbol	Min.	Max.
K	2.90	3.10
L	4.90	5.30
M	1.90	2.10
N	4.50	4.70
O	5.40	5.60
P	2.29	2.49
Q	0.51	0.71
R	ϕ3.5	ϕ3.7
S	ϕ7.1	ϕ7.3

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