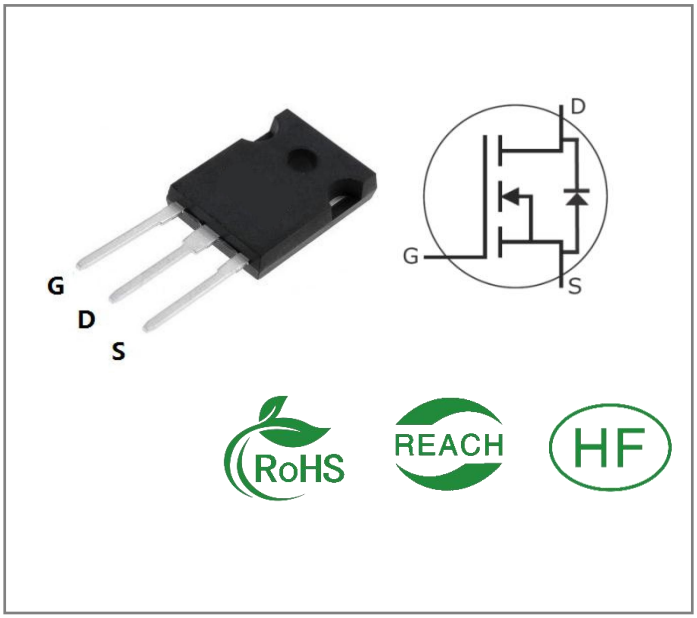
VDS	RDS(on)	ID@25℃
1200V	160mΩ	18A



Applications:

- Power Supplies
- High Voltage DC/DC Converters
- Motor Drives
- Switch Mode Power Supplies
- Pulsed Power applications

Features:

- High Blocking Voltage with Low On-Resistance
- High Speed Switching with Low Capacitances
- Easy to Parallel and Simple to Drive

Benefits:

- Higher System Efficiency
- Reduced Cooling Requirements
- Increased Power Density
- Increased System Switching Frequency

Ordering Information

Part Number	Package	Marking	Packing	Qty.
RSM120160W	TO-247-3	RSM120160W	Tube	30 PCS

Maximum Ratings (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
VDSmax	Drain - Source Voltage	1200	V	VGS=0V,ID =100μA	
VGSmax	Gate - Source Voltage	-10/+25	V	Absolute maximum values	
VGSop	Gate - Source Voltage	-5/+20	V	Recommended operational values	
ID	Continuous Drain Current	18 12	A	VGS=20V, TC =25℃ VGS=20V, TC =100℃	
ID(pulse)	Pulsed Drain Current	40	A	Pulse width tp limited by TJmax	
PD	Power Dissipation	125	W	TC =25℃, TJ =150℃	
TL	Solder Temperature	260	℃		
TJ, Tstg	Operating Junction and StorageTemperature	-55 to + 150	℃		

Electrical Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions	Note
V(BR)DSS	Drain-Source Breakdown Voltage	1200			V	VGS=0V,ID =100μA	
VGS(th)	Gate Threshold Voltage	2.0	2.4	4.0	V	VGS= VDS, IDS=2.5mA	
			1.8		V	VGS= VDS, IDS=2.5mA TC =150℃	
IDSS	Zero Gate Voltage Drain Current		1	100	μA	VDS= 1200V, VGS=0V	
IGSS	Gate-Source Leakage Current		10	250	nA	VGS=25V, VDS= 0V	
RDS(on)	Drain-Source on-state Resistance		160	196	mΩ	VGS=20V, ID =10A	
			280			VGS=20V, ID =10A TC =150℃	
Ciss	Input Capacitance		890		pF	VGS=0V, VDS=1000 V f=1MHz，VAC=25 mV	
Coss	Output Capacitance		54				
Crss	Reverse Transfer Capacitance		8.5				
Eoss	Coss Stored Energy		31		μJ		
EON	Turn-On Switching Energy		315			VDS =800V, VGS =-5/20V ID = 10A,RG(ext) = 2.5Ω L= 200μH	
EOFF	Turn-Off Energy		63				
td(on)	Turn-On Delay Time		8		ns	VDS =800V, VGS =-5/20 V ID = 10A, RG(ext) = 2.5 Ω RL =80Ω	
tr	Rise Time		9				
td(off)	Turn-Off Delay Time		14				
tf	Fall Time		9				
RG(int)	Internal Gate Resistance		5.5		Ω	f=1 MHz, VAC=25mV	
Qgs	Gate to Source Charge		17		nC	VDS=800V VGS=-5/20V ID =10A	
Qgd	Gate to Drain Charge		9		nC		
Qg	Total Gate Charge		49				

Reverse Diode Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Typ.	Max	Unit	Test Conditions	Note
VSD	Diode Forward Voltage	4.2		V	VGS=-5V, ISD =5 A	
		3.9		V	VGS=-5V, ISD= 5 A TJ= 150℃	
IS	Continuous Diode Forward Current		23	A	TC= 25℃	
trr	Reverse Recovery time	28		ns	ISD= 10 A VR = 800V	
Qrr	Reverse Recovery Charge	50		nC		
Irrm	Peak Reverse Recovery Current	3		A		

Thermal Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions
RθJC	Thermal Resistance from Junction to Case	0.90		℃/W	
RθJA	Thermal Resistance From Junction to Ambient		40		

Typical Feature Curve

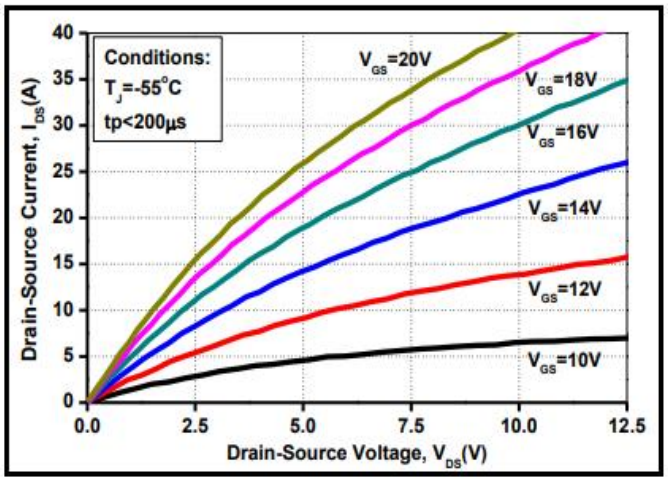


Figure 1. Output Characteristics T_J = -55 ℃

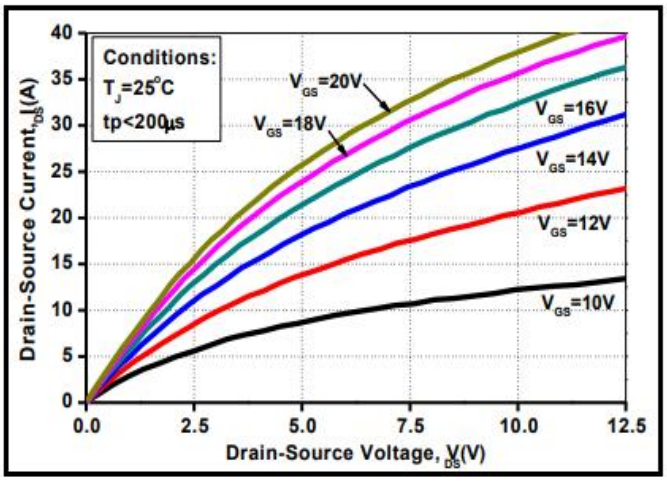


Figure 2. Output Characteristics T_J = 25 ℃

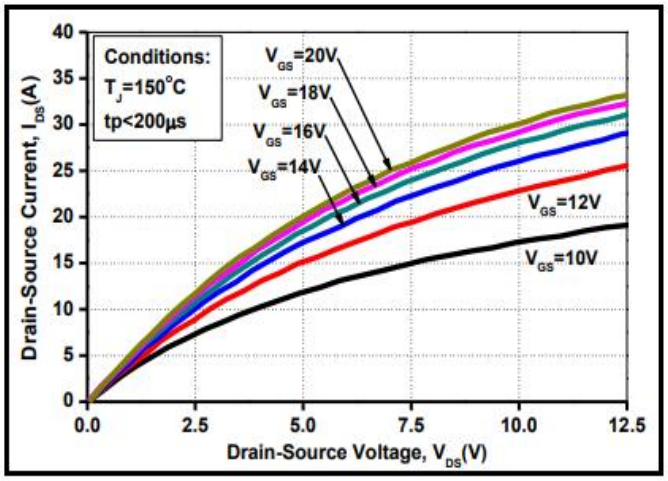


Figure 3. Output Characteristics T_J = 150 ℃

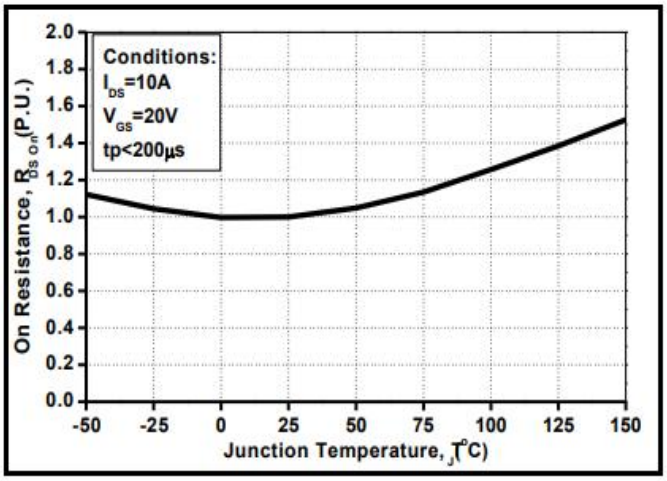


Figure 4. Normalized On-Resistance vs. Temperature

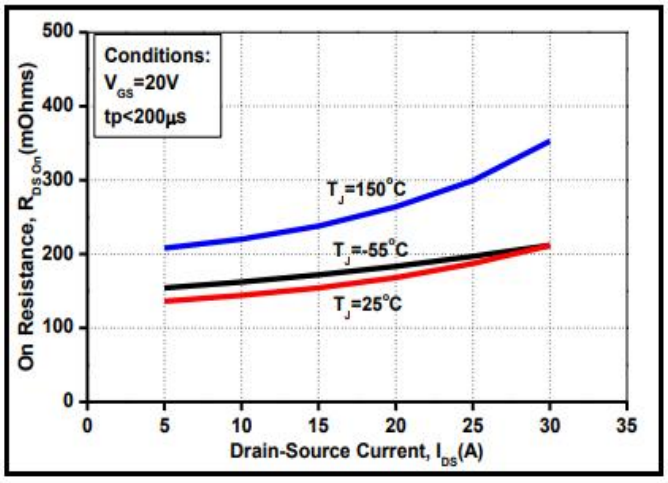


Figure 5. On-Resistance vs. Drain Current
For Various Temperatures

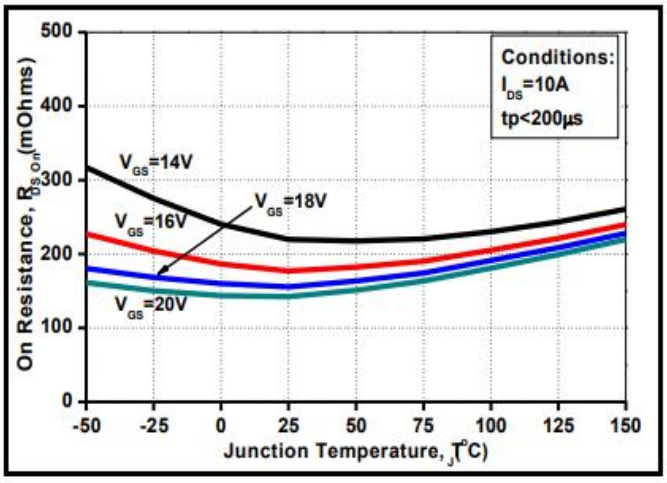


Figure 6. On-Resistance vs. Temperature
For Various Gate Voltage

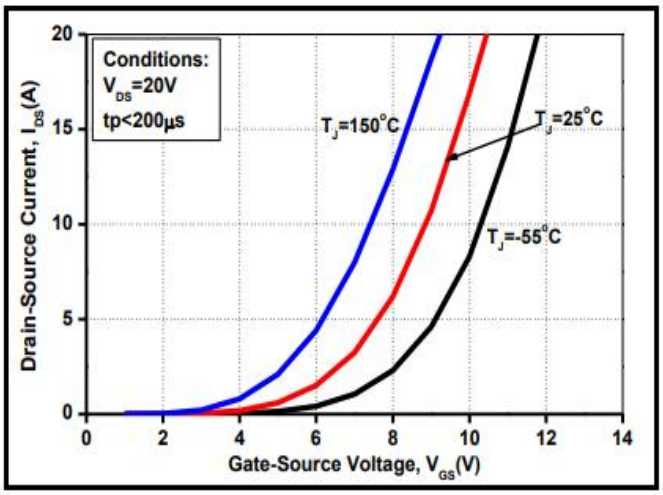


Figure 7. Transfer Characteristic for Various Junction Temperatures

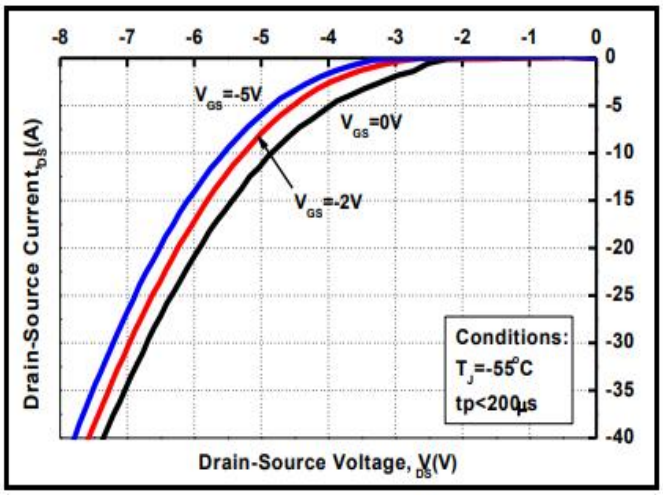


Figure 8. Body Diode Characteristic at -55 ℃

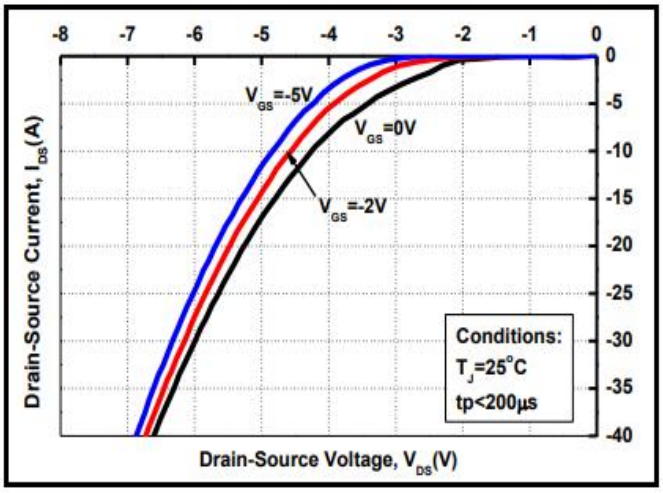


Figure 9. Body Diode Characteristic at 25 ℃

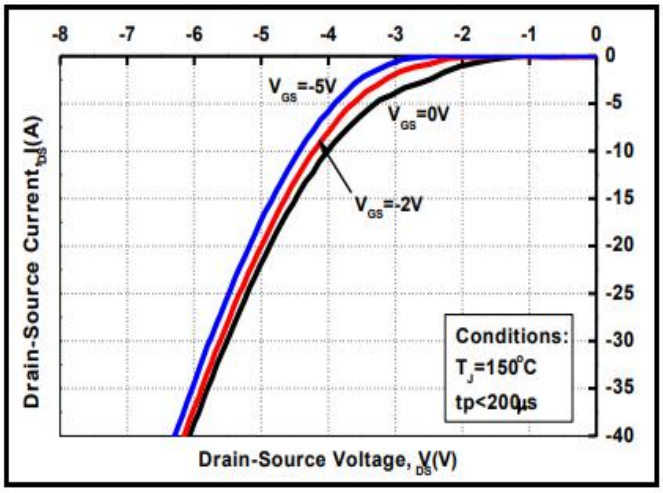


Figure 10. Body Diode Characteristic at 150 ℃

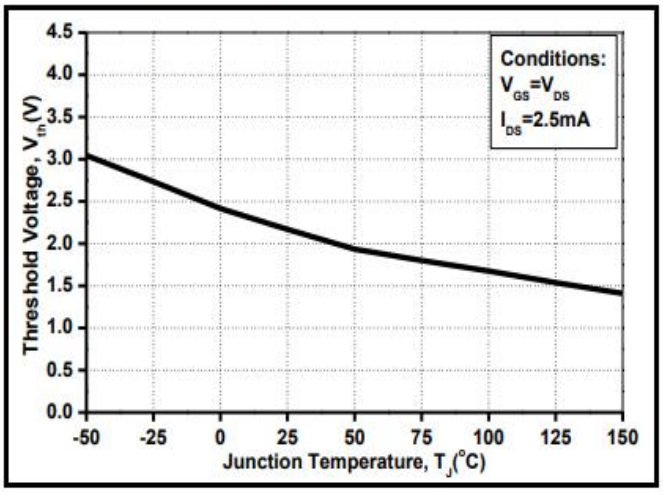


Figure 11. Threshold Voltage vs. Temperature

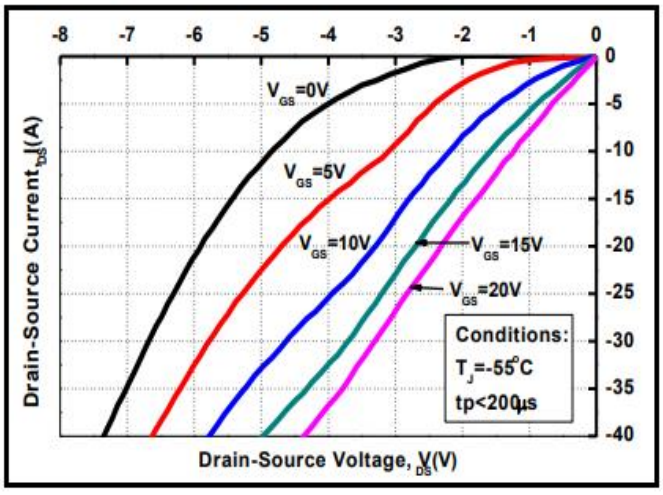


Figure 12. 3rd Quadrant Characteristic at -55 ℃

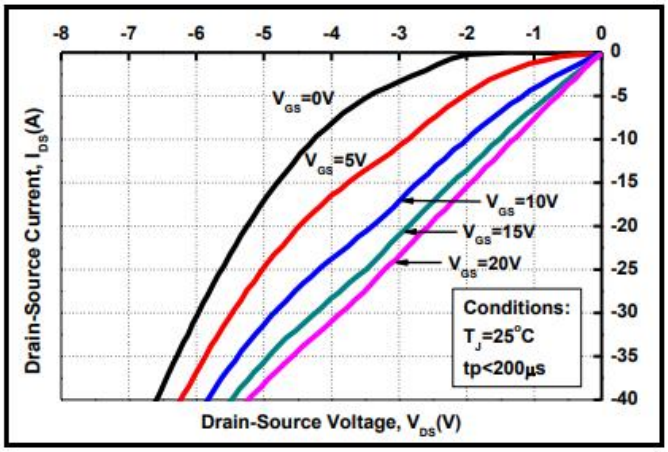


Figure 13. 3rd Quadrant Characteristic at 25 ℃

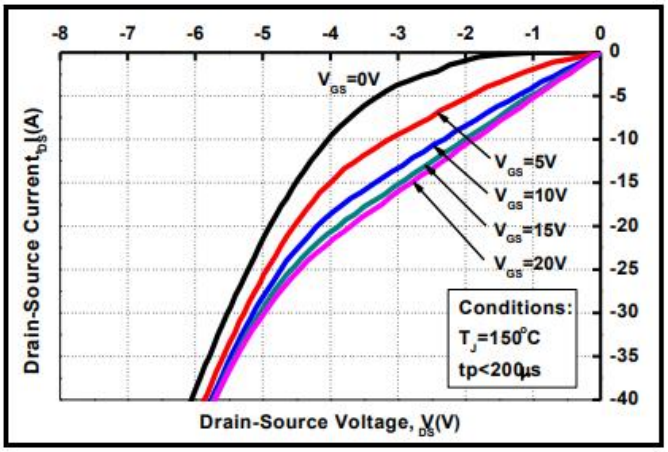


Figure 14. 3rd Quadrant Characteristic at 150 ℃

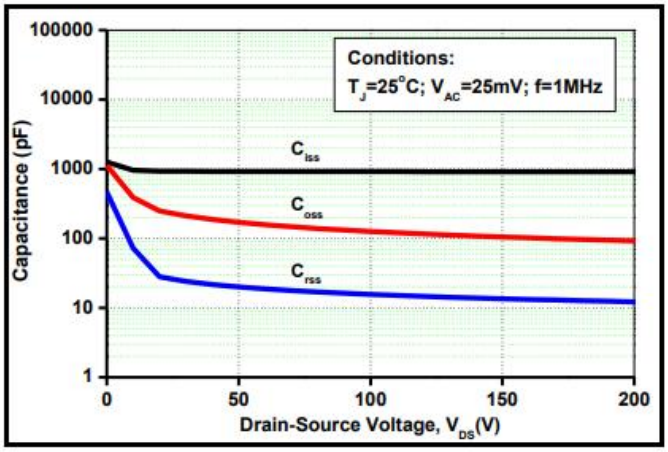


Figure 15. Capacitances vs. Drain-Source Voltage (0 - 200V)

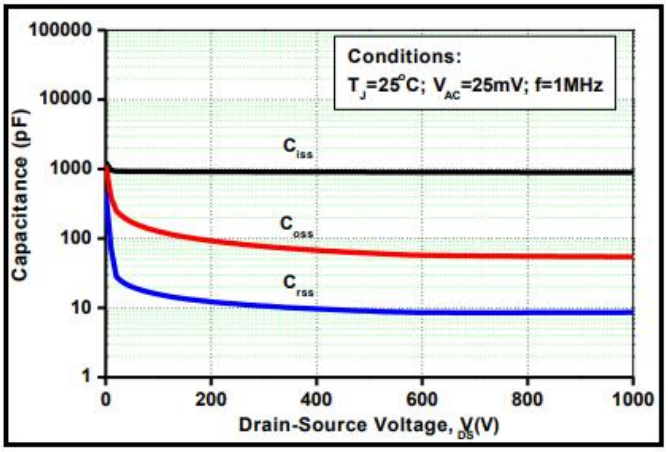
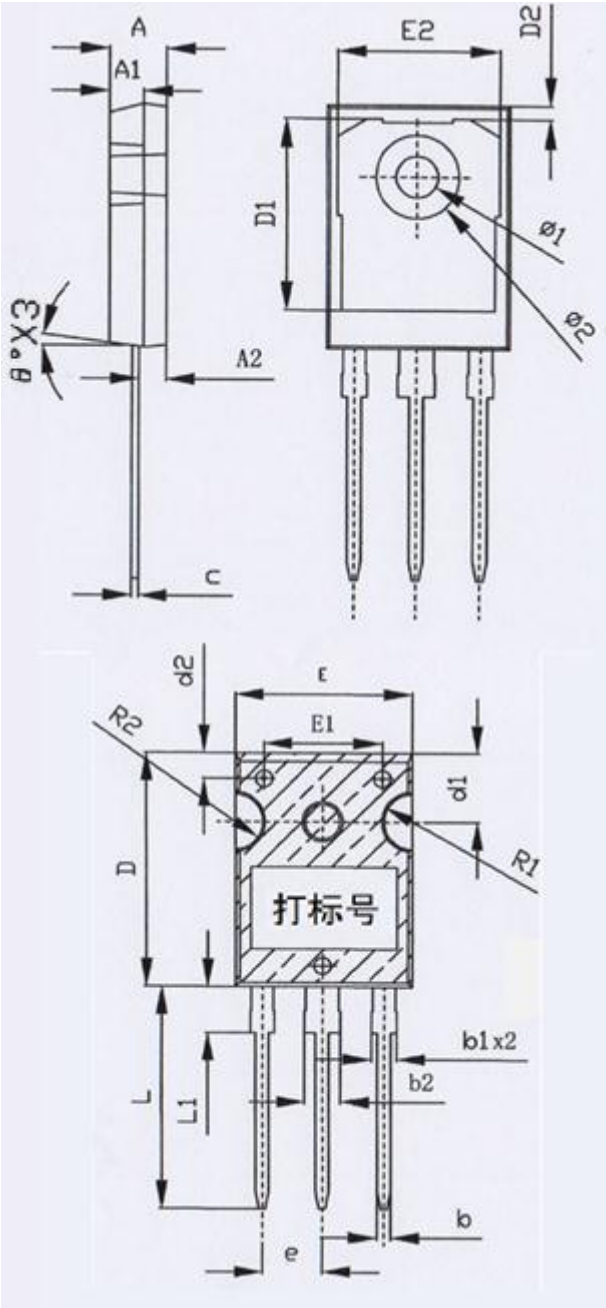


Figure 16. Capacitances vs. Drain-Source Voltage (0 - 1000V)

Package outline drawing(TO-247-3 Unit: mm)



SYMBOLS	DIMENSIONS IN MILLMETERS		
	MIN	NOM	MAX
A	4.9	5	5.1
A1	2.9	3	3.1
A2	2.31	2.36	2.41
b	1.16	1.2	1.26
b1	2.05	-	2.2
b2	3.05	-	3.2
c	0.58	0.6	0.66
D	20.9	21	21.1
D1	16.46	16.56	16.76
D2		1.17	
d1	6.05	6.15	6.25
d2	2.2	2.3	2.4
E	15.7	15.8	15.9
E1		10.5	
E2		14.02	
e	-	1.27bcs	-
L	19.82	19.92	20.02
L1	1.88	1.98	2.08
θ	0°	7°	8°
R1	-	2.7	-
R2	-	2.5	-
Φ1		3.6	
Φ2	-	7.19	-

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