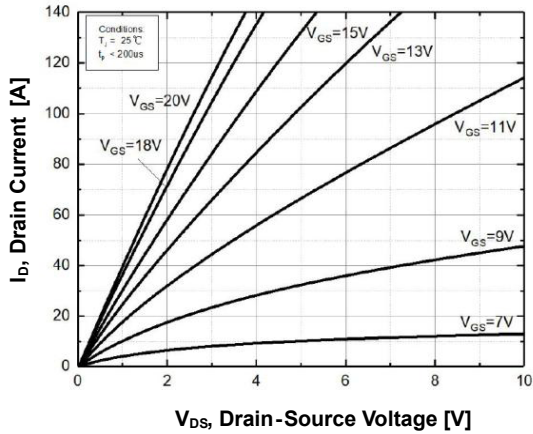
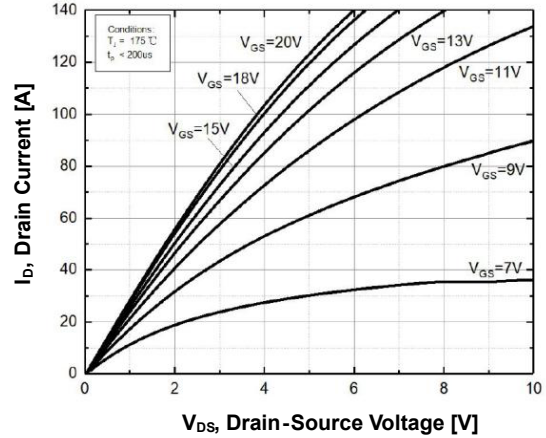
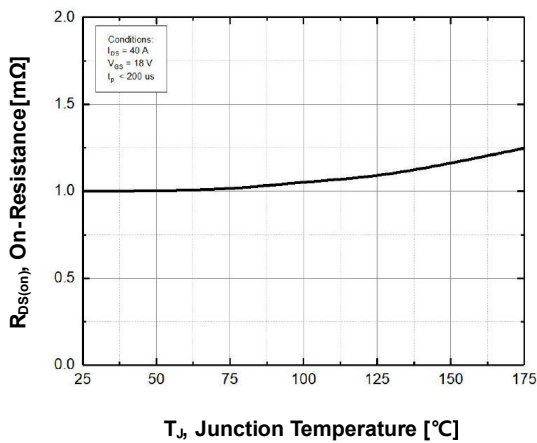
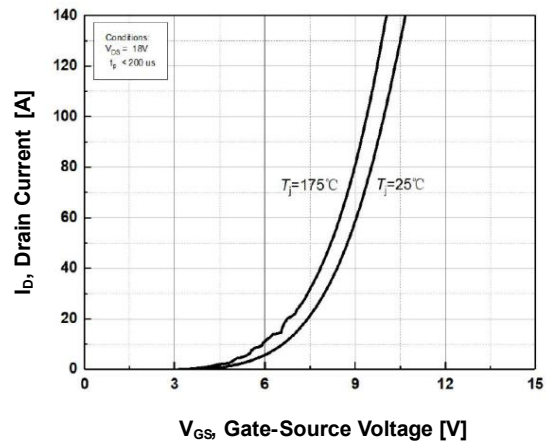
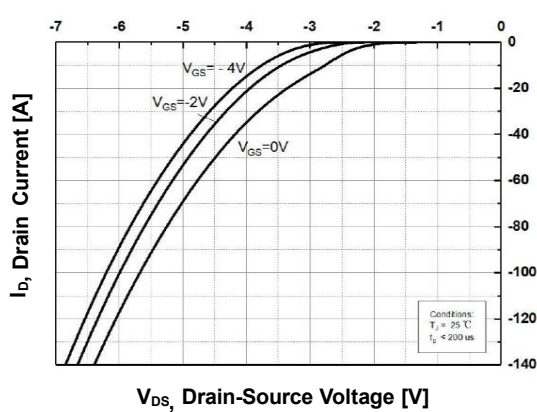
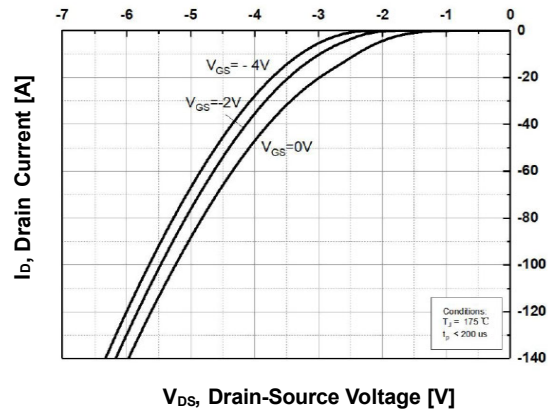
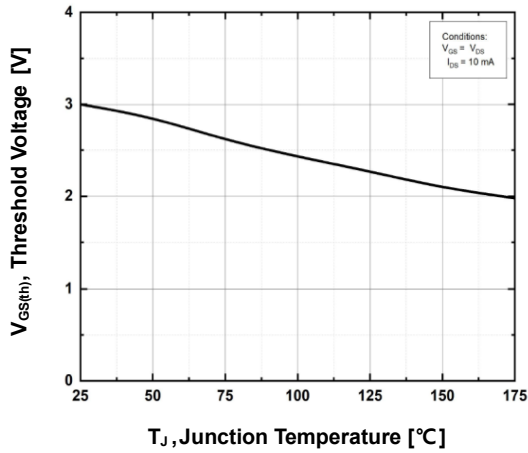
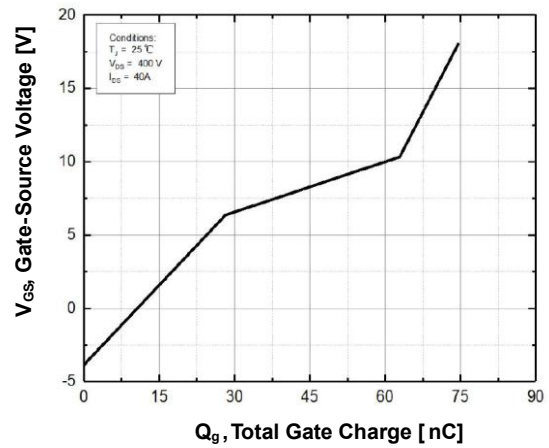
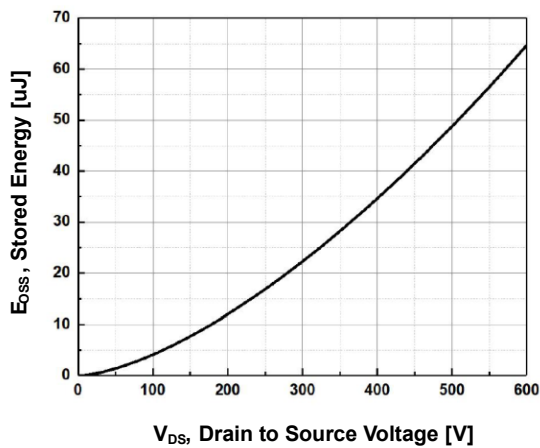
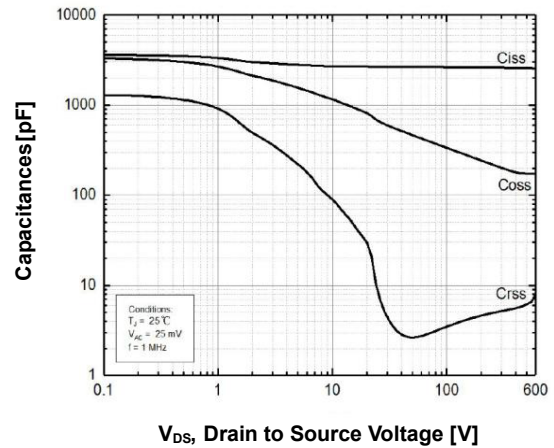
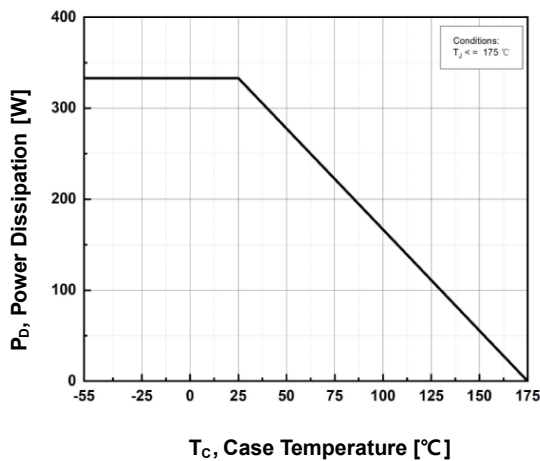
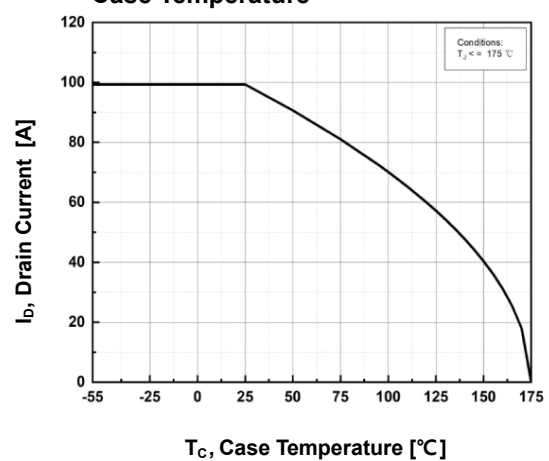


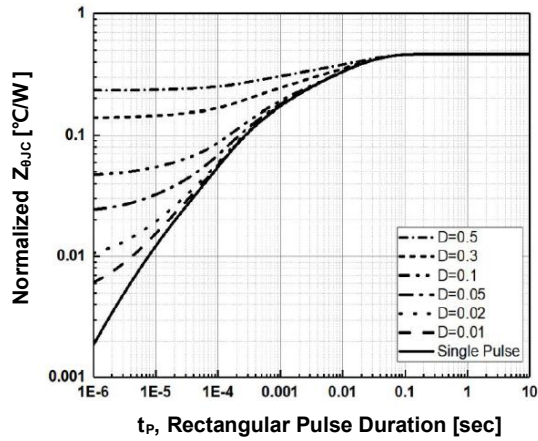
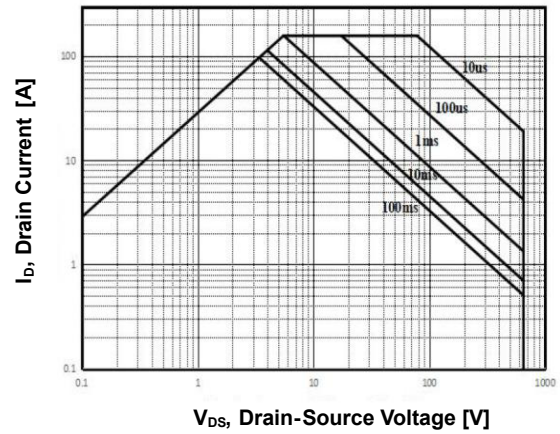
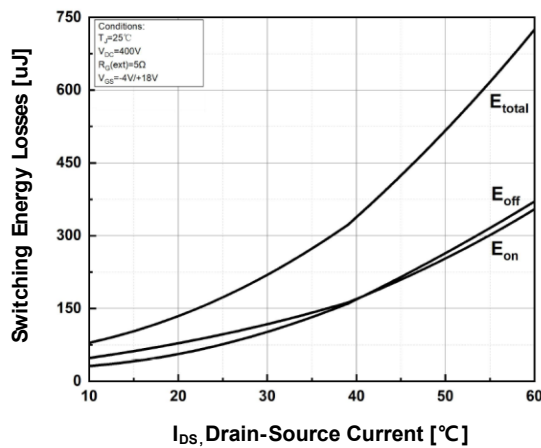
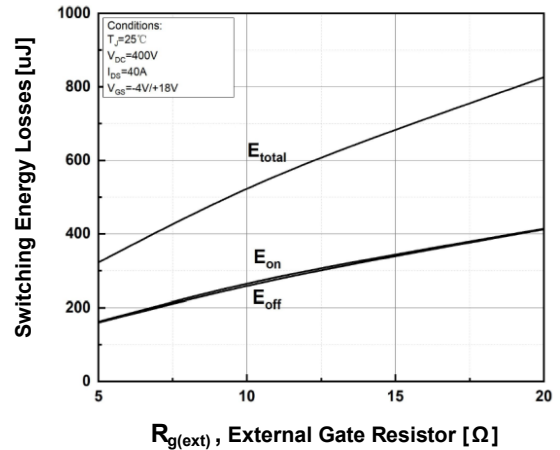
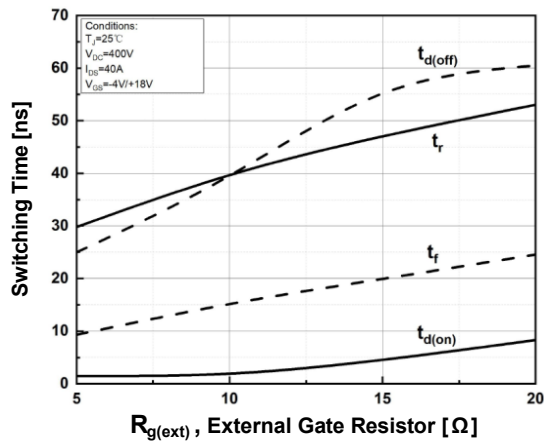


**Electrical Characteristics @ T<sub>c</sub> =25°C (unless otherwise specified)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>OFF Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{DS}$	$V_{GS}=0V, I_D=100\mu A$	650	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{GS}=0V, V_{DS}=650V$	-	1	50	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS}=18V, V_{DS}=0V$	-	-	250	nA
<b>ON Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=16mA$	-	3	-	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=18V, I_D=40A$	-	26	38	m $\Omega$
		$V_{GS}=18V, I_D=40A, T_J=175^\circ C$	-	35	-	
Internal Gate Resistance	$R_{G(int.)}$	$f=1MHz, V_{AC}=25mV$	-	1.2	-	$\Omega$
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=600V$ $V_{GS}=0V$ $f=1MHz$ $V_{AC}=25mV$	-	2500	-	pF
Output Capacitance	$C_{oss}$		-	180	-	
Reverse Transfer Capacitance	$C_{rss}$		-	8	-	
Turn-On Switching Energy	$E_{on}$	$V_{DS}=400V, V_{GS}=-4/+18V$ $I_D=40A, R_{G(ext)}=5\Omega$	-	170	-	$\mu J$
Turn-Off Switching Energy	$E_{off}$		-	170	-	
Total Switching Energy	$E_{tot}$		-	340	-	
<b>Switching Characteristics</b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=400V$ $V_{GS}=-4/+18V$ $I_D=40A$ $R_{G(ext)}=5\Omega$	-	5	-	ns
Rise Time	$t_r$		-	33	-	
Turn-Off Delay Time	$t_{d(off)}$		-	30	-	
Fall Time	$t_f$		-	10	-	
Total Gate Charge	$Q_g$	$V_{DS}=400V$ $V_{GS}=-4/+18V$ $I_D=40A$	-	75	-	nC
Gate to Source Charge	$Q_{gs}$		-	30	-	
Gate to Drain Charge	$Q_{gd}$		-	35	-	
<b>Body Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=-4V, I_{SD}=20A$	-	4.3	-	V
Continuous Diode Forward Current	$I_S$	$V_{GS}=-4V, T_C=25^\circ C$	-	70	-	A
Reverse Recovery Time	$T_{rr}$	$V_{GS}=-4V$ $I_S=40A, V_R=400V$ $di/dt=3600A/\mu s$	-	16	-	ns
Reverse Recovery Charge	$Q_{rr}$		-	260	-	nC
Reverse Recovery Charge	$I_{rrm}$		-	21	-	A
<b>Thermal Resistance</b>						
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$		-	0.45	-	$^\circ C/W$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$		-	40	-	

**Typical Performance**
**Fig 1. Output Characteristics,  $T_J = 25^\circ\text{C}$** 

**Fig 2. Output Characteristics,  $T_J = 175^\circ\text{C}$** 

**Fig 3. On-Resistance Variation vs. Temperature**

**Fig 4. Transfer Characteristics**

**Fig 5.  $V_{DS}$ - $I_{DS}$  Characteristics,  $T_J = 25^\circ\text{C}$** 

**Fig 6.  $V_{DS}$ - $I_{DS}$  Characteristics,  $T_J = 175^\circ\text{C}$** 


**Typical Performance**
**Fig 7. Threshold Voltage vs. Temperature**

**Fig 8. Gate Charge Characteristics**

**Fig 9. Stored Energy in Output Capacitance**

**Fig 10. Capacitance Characteristics**

**Fig 11. Max.  $P_D$  Derating vs. Case Temperature**

**Fig 12. Continuous  $I_D$  Derating vs. Case Temperature**


**Typical Performance**
**Fig 13. Transient Thermal impedance**

**Fig 14. Safe Operating Area**

**Fig 15. CIS Energy vs. Drain Current**

**Fig 16. CIS Energy vs.  $R_{g(\text{ext})}$** 

**Fig 17. Switching Times vs.  $R_{g(\text{ext})}$** 


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