

Product Summary

$V_{(BR)DSS}$	$R_{DS(ON)(Typ)}$	I_D
1200V	30m Ω	75A

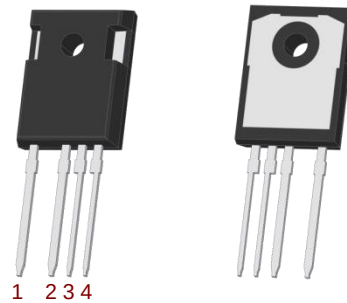
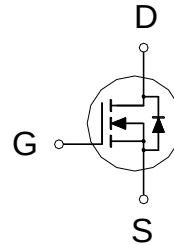


Features

- Low Turn-on Resistance.
- Low Capacitance.
- Low Qrr.
- Easy to Parallel.
- Halogen Free ,RoHS Complaint.

Applications

- Big power SMPS/UPS.
- Power Inverter.
- High Voltage DC/DC converter.
- Motor Drivers.



- 1: Drain
2: Source
3: Kelvin Source
4: Gate

Absolute Maximum Ratings ($T_J = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Parameters / Conditions		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	1200	V
Gate-Source Voltage		V_{GS}	-10 / +22	
Continuous Drain Current ²	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	75	A
	$T_C = 100\text{ }^{\circ}\text{C}$		53	
Pulsed Drain Current ¹		I_{DM}	150	
Avalanche Current		I_{AS}	8	
Avalanche Energy	L = 40mH	E_{AS}	1280	mJ
Recommended turn-on Gate-Source Voltage		V_{GS_ON}	18	V
Recommended turn-off Gate-Source Voltage		V_{GS_off}	-5	V
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	333	W
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 175	$^{\circ}\text{C}$

Thermal Resistance Ratings

Thermal resistance	Symbol	Value	Unit
Junction-to-Case	$R_{\theta JC}$	0.45	$^{\circ}\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Ensure that the channel temperature does not exceed 175 $^{\circ}\text{C}$.

Electrical Characteristics ($T_J = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)

Parameters	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 1mA$	1200			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 10mA$	2	3	4	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = 22V$			100	nA
		$V_{DS} = 0V, V_{GS} = -10V$			-100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 1200V, V_{GS} = 0V$			1	μA
		$V_{DS} = 1200V, V_{GS} = 0V, T_J = 175\text{ }^{\circ}\text{C}$			10	
Drain-Source On-State Resistance ³	$R_{DS(ON)}$	$V_{GS} = 18V, I_D = 35A$		30	39	$m\Omega$
Forward Transconductance ³	g_{fs}	$V_{DS} = 10V, I_D = 35A$		18		S
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 800V, f = 100KHz$		3327		pF
Output Capacitance	C_{oss}			135		
Reverse Transfer Capacitance	C_{rss}			22		
Coss Stored Energy	E_{oss}	$V_{DS} = 0 \text{ to } 790V$		67		μJ
Internal Gate Resistance	$R_{g(int)}$	$f = 1MHz$		2.6		Ω
Total Gate Charge ⁴	Q_g	$V_{DD} = 800V, I_D = 75A, V_{GS} = -5/18V$		172		nC
Gate-Source Charge ⁴	Q_{gs}			47		
Gate-Drain Charge ⁴	Q_{gd}			104		
Turn-On Delay Time ⁴	$t_{d(on)}$	$V_{DD} = 800V, V_{GS} = -2/18V, I_D = 40A, R_G = 4.7\Omega$		48		nS
Rise Time ⁴	t_r			58		
Turn-Off Delay Time ⁴	$t_{d(off)}$			102		
Fall Time ⁴	t_f			20		
Turn-on Switching Energy	E_{on}	$V_{DD} = 800V, I_D = 40A, V_{GS} = -2/18V, R_G = 4.7\Omega, L_S = 345\mu H$		1.12		mJ
Turn-off Switching Energy	E_{off}			0.76		

Reverse Diode Characteristics ($T_J = 25^\circ\text{C}$)

Parameters	Symbol	Conditions	Min.	Typ.	Max.	Unit
Continuous Current ⁵	I_S				75	A
Forward Voltage ³	V_{SD}	$I_F = 35\text{A}$, $V_{GS} = 0\text{V}$		4.1		V
Diode Reverse Recovery Time	t_{rr}	$I_F = 40\text{A}$, $V_{DD} = 800\text{V}$, $dI/dt = 1.8\text{kA}/\mu\text{s}$		62		nS
Diode Reverse Recovery Charge	Q_{rr}			0.85		uC
Peak Reverse Recovery Current	I_{rrm}			28		A

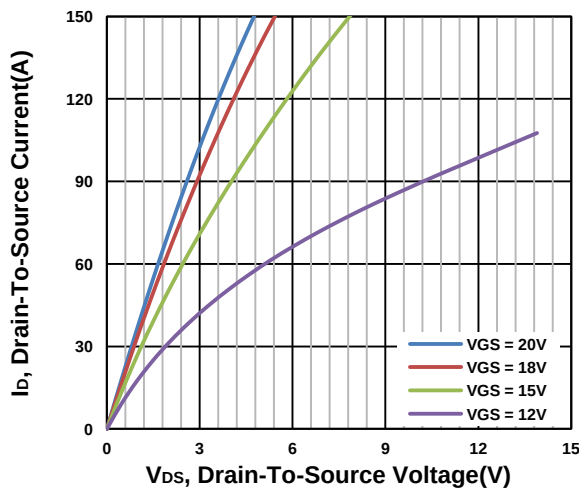
³Pulse test : Pulse Width $\leq 380 \mu\text{sec}$, Duty Cycle $\leq 2\%$.

⁴Independent of operating temperature.

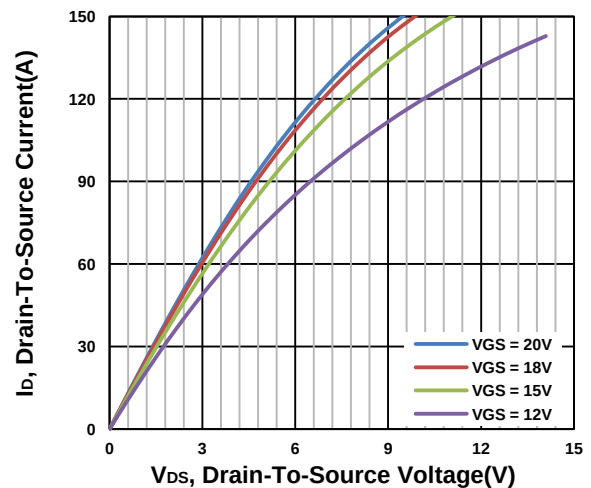
⁵Pulse width limited by maximum junction temperature.

TYPICAL PERFORMANCE CHARACTERISTICS (Curves may be different, affected by product characteristic, unless noted otherwise.)

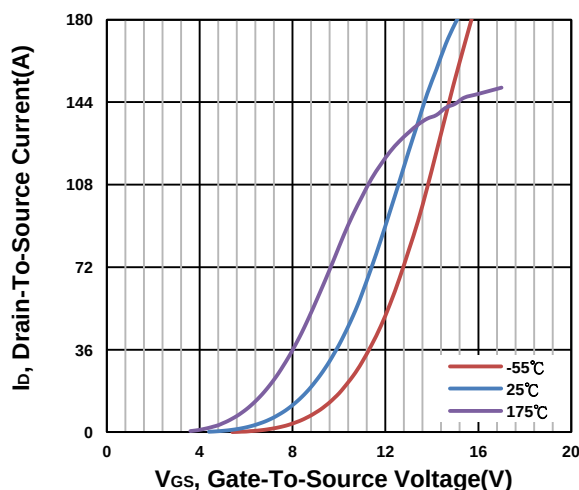
Output Characteristics ($T_J = 25^\circ\text{C}$)



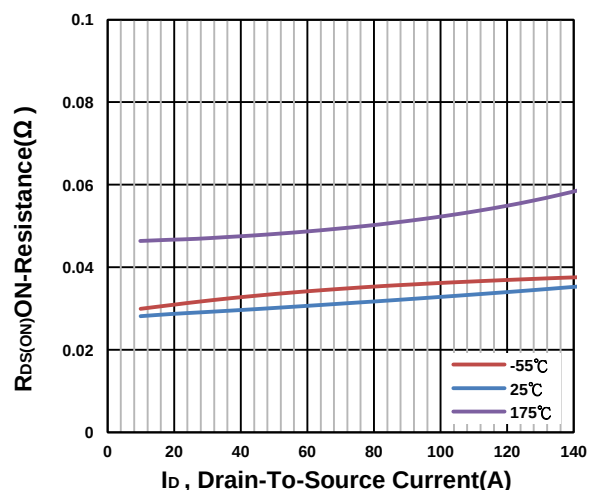
Output Characteristics ($T_J = 175^\circ\text{C}$)



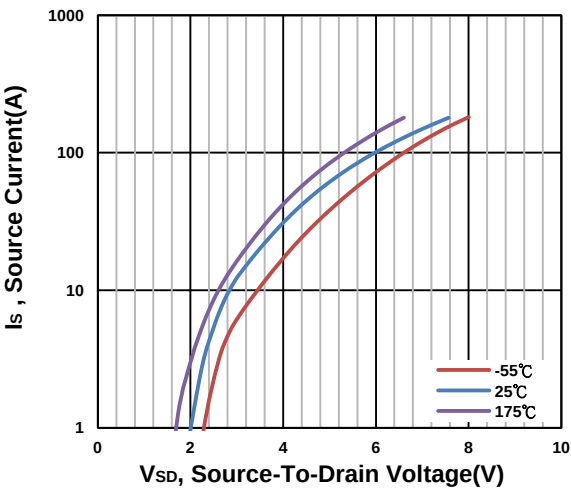
Transfer Characteristics



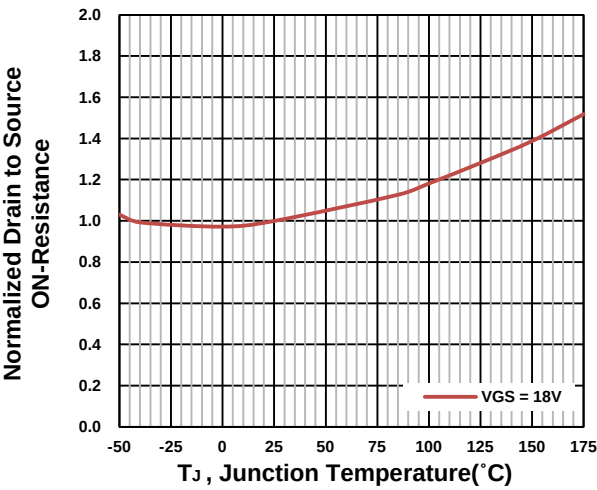
On-Resistance VS Drain Current



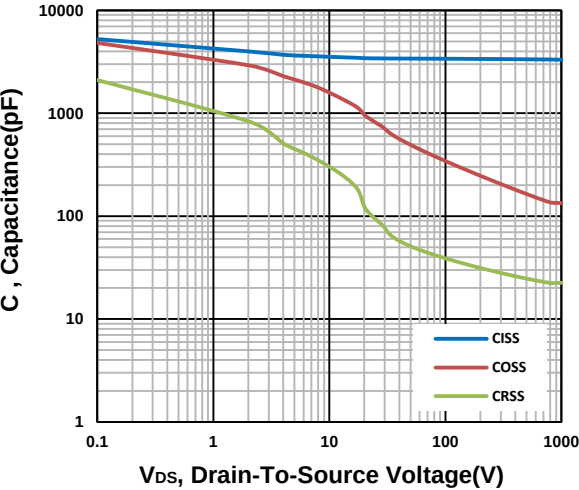
Source-Drain Diode Forward Voltage



On-Resistance VS Temperature



Capacitance Characteristic



Gate charge Characteristics

