



## FEATURES

- Fast Switching
- Low ON Resistance
- 100% Single Pulse avalanche energy Test

## APPLICATIONS

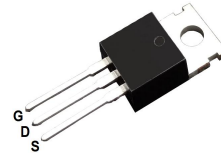
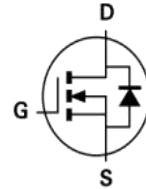
- Battery protection
- Load switch
- Uninterruptible power supply

## MECHANICAL DATA

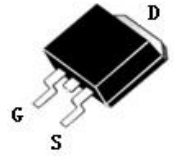
- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275°C maximum, 10s per JESD 22-B106

## MAIN CHARACTERISTICS

$I_D$	$V_{DSS}$	$R_{DS(on)-typ}(@V_{GS}=10V)$
130A	100V	3.4mΩ



TO-220C



TO-263C

## Product specification classification

Part Number	Package	Mode Name	Pack
LX220T130N100L	TO-220C	LX220T130N100L	Tape
LX263T130N100L	TO-263C	LX263T130N100L	Tape



**Maximum Ratings at  $T_c=25^\circ\text{C}$  unless otherwise specified**

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continue Drain Current	$I_D$	130	A
Pulsed Drain Current (Note1)	$I_{DM}$	520	A
Power Dissipation	$P_D$	210	W
Single Pulse Avalanche Energy (Note1)	$E_{AS}$	306	mJ
Operating Temperature Range	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.71	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	55	$^\circ\text{C/W}$

Note1:Pulse test: 300  $\mu\text{s}$  pulse width, 2 % duty cycle

**Electrical Characteristics at  $T_c=25^\circ\text{C}$  unless otherwise specified**

Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	$BV_{DSS}$	100	-	-	V
Drain-Source Leakage Current	$V_{DS} = 100\text{ V}, V_{GS} = 0\text{ V}$	$I_{DSS}$	-	-	1	$\mu\text{A}$
Gate Leakage Current	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$	$I_{GSS}$	-	-	$\pm 100$	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance (Note 3)	$V_{GS} = 10\text{ V}, I_D = 20\text{ A}$	$R_{DS(on)}$	-	3.4	4.25	m $\Omega$
Forward Transconductance	$V_{DS} = 5\text{ V}, I_D = 65\text{ A}$	gfs	-	130	-	S
Input Capacitance	$V_{DS}=50\text{ V}, V_{GS}=0\text{ V}, f=1\text{MHz}$	$C_{iss}$	-	6000	-	pF
Output Capacitance		$C_{oss}$	-	2950	-	pF
Reverse Transfer Capacitance		$C_{rss}$	-	275	-	pF
Turn-on Delay Time(Note2)	$V_{DD}=50\text{ V}, V_{GS}=10\text{ V}, RG=3\ \Omega, I_D=65\text{ A}$	$t_{d(ON)}$	-	23	-	ns
Rise Time(Note2)		$t_r$	-	15	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	48	-	ns
Fall Time(Note2)		$t_f$	-	16	-	ns
Total Gate Charge(Note2)	$V_{DS}=50\text{ V}, V_{GS}=10\text{ V}, I_D=65\text{ A}$	$Q_G$	-	110	-	nC
Gate to Source Charge(Note2)		$Q_{GS}$	-	33	-	nC
Gate to Drain Charge(Note2)		$Q_{GD}$	-	30	-	nC

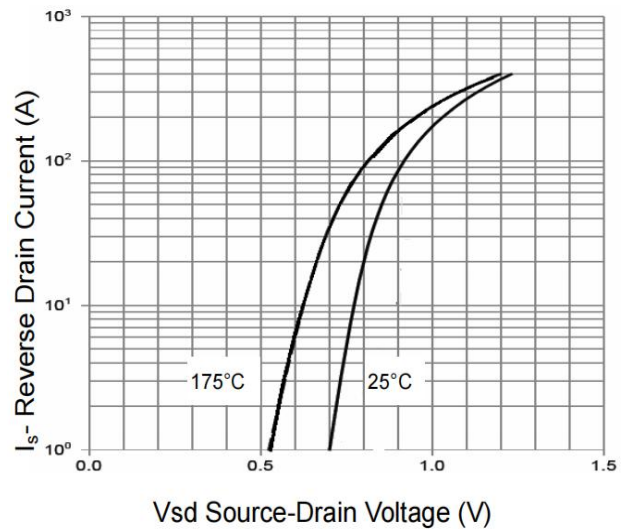
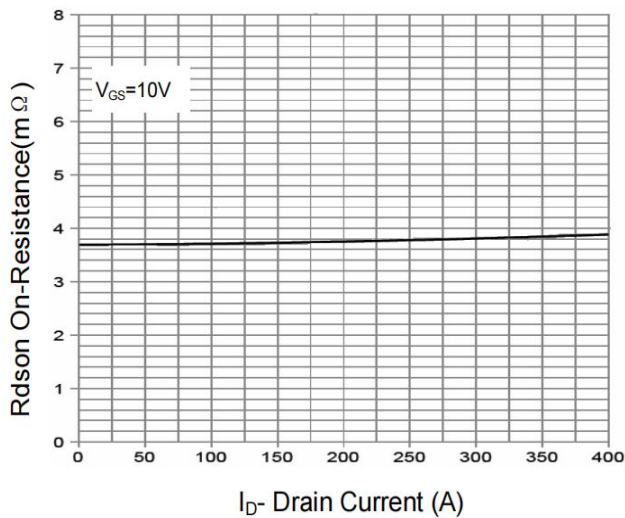
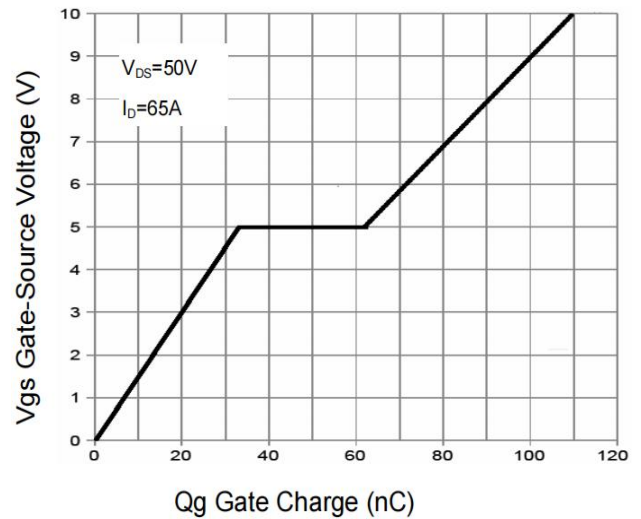
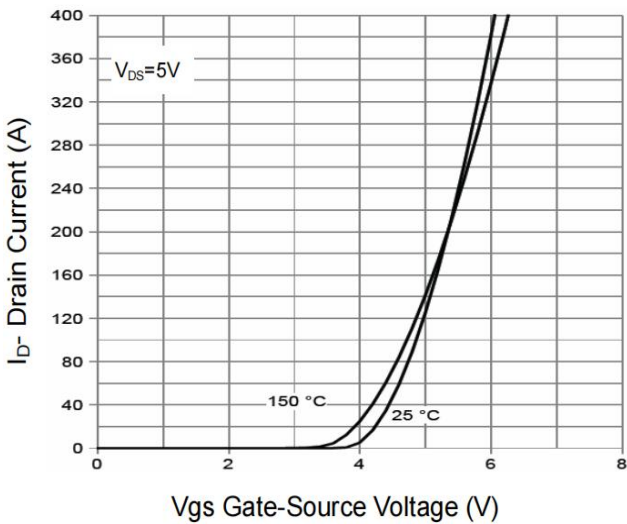
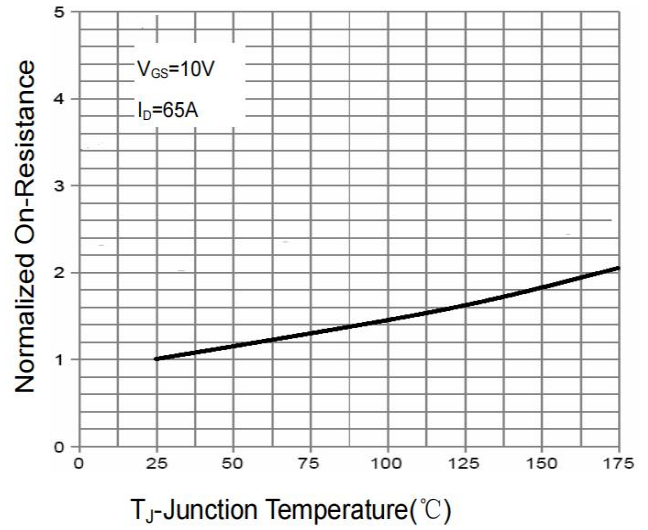
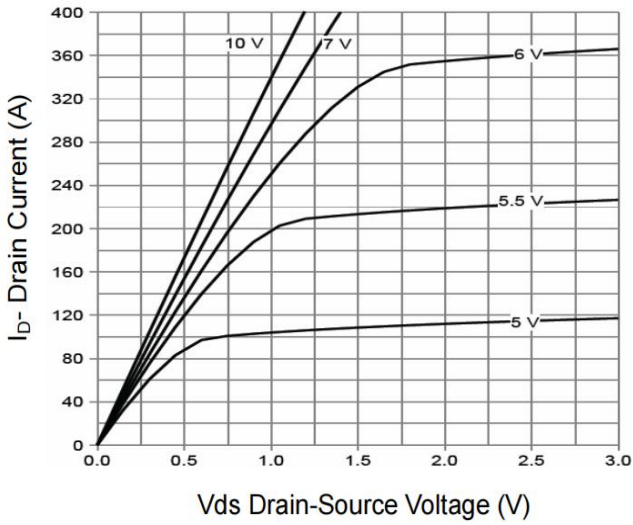
**Source-Drain Diode Characteristics at  $T_a=25^\circ\text{C}$  unless otherwise specified**

Characteristics	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		$I_S$	-	-	130	A
Drain-Source Diode Forward Voltage	$V_{GS}=0\text{ V}, I_S=40\text{ A}, T_J=25^\circ\text{C}$	$V_{SD}$	-	0.86	1.2	V
Reverse Recovery Time(Note2)	$T_J = 25^\circ\text{C}, I_F = 65\text{ A}, di/dt = 100\text{ A}/\mu\text{s}$	trr	-	70	-	ns
Reverse Recovery Charge(Note2)		Qrr	-	117	-	nC

Note2:Pulse test: 300  $\mu\text{s}$  pulse width, 2 % duty cycle

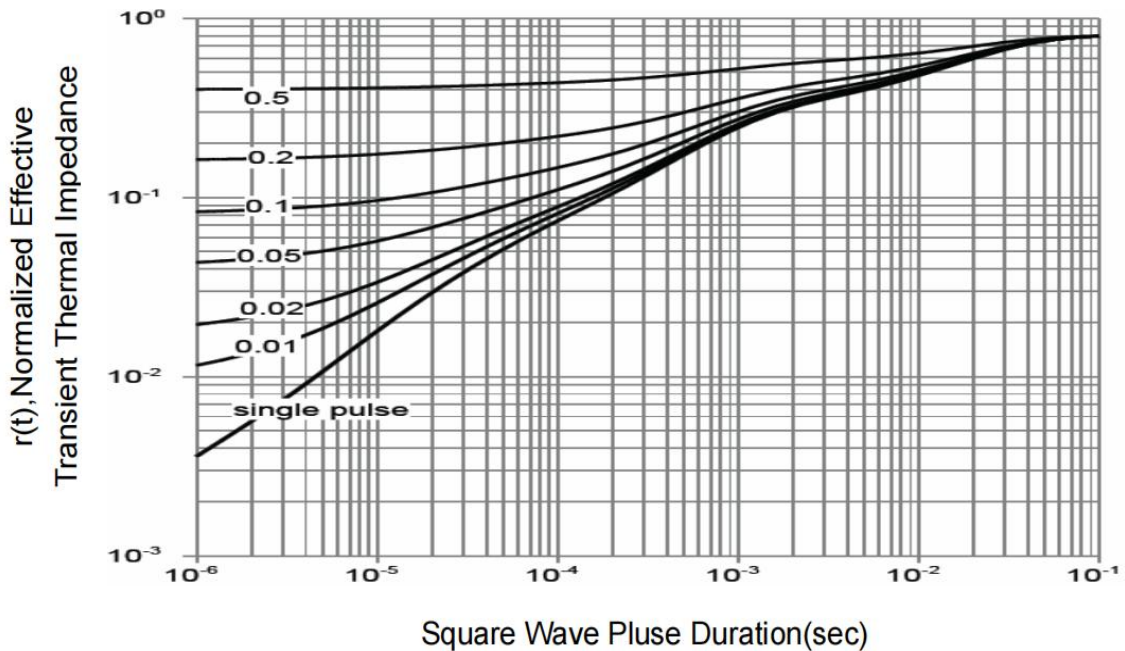
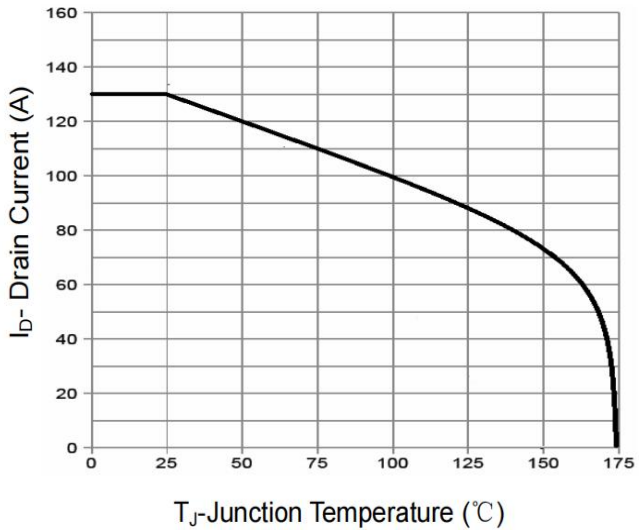
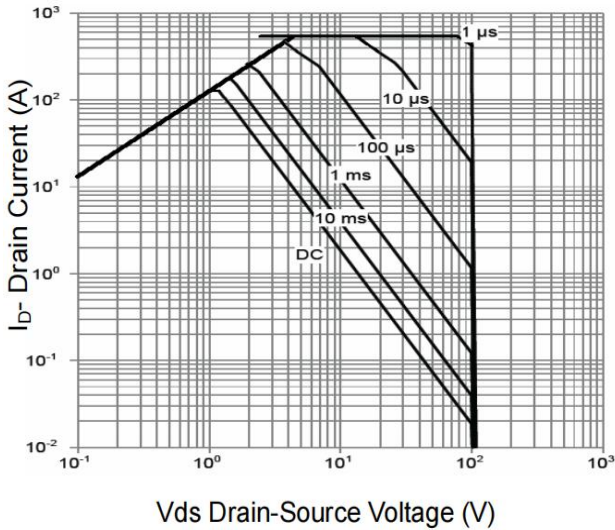
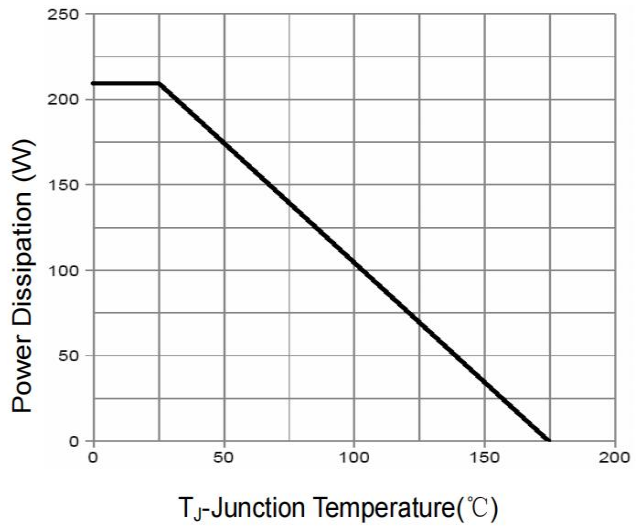
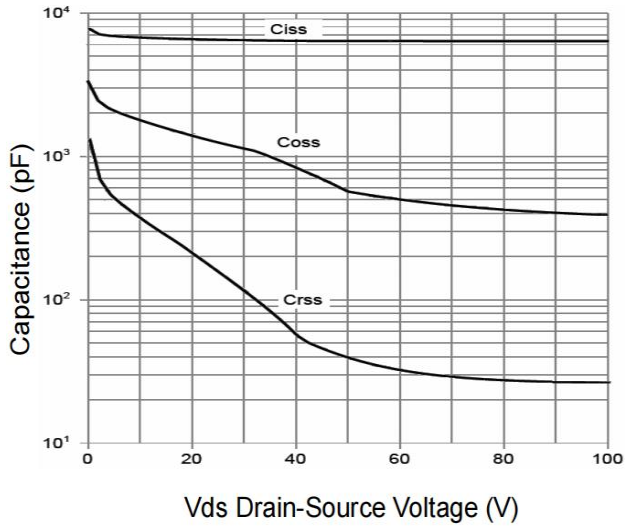


RATINGS AND CHARACTERISTIC CURVES



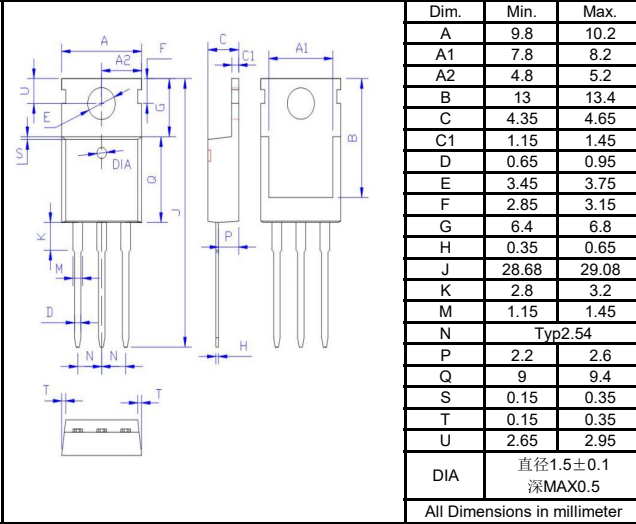


RATINGS AND CHARACTERISTIC CURVES



Package Outline Dimensions millimeters

T0-220C



T0-263C

