



FEATURES

● Adopt advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

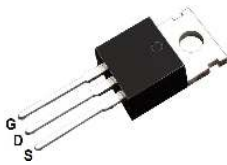
- I_D 120A
- V_{DSS} 100V
- $R_{DS(ON)-typ}(@V_{GS}=10V)$ 4.5m

MECHANICAL DATA

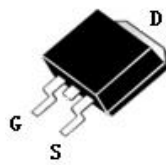
- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275°C maximum,10s per JESD 22-B106

APPLICATIONS

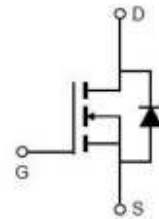
- Battery protection
- Load switch
- Uninterruptible power supply



TO-220C



TO-263C



Schematic Diagram

Product specification classification

Part Number	Package	Mode Name	Pack
LX120N10AP	TO-220C	LX120N10AP	Tape
LX120N10AT	TO-263C	LX120N10AT	Tape



Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continue Drain Current	I_D	120	A
Pulsed Drain Current (Note1)	I_{DM}	520	A
Power Dissipation	P_D	210	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	750	mJ
Operating Temperature Range	T_J	175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.71	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	55	°C/W

Note1:Pulse test: 300 μ s pulse width, 2 % duty cycle

Electrical Characteristics at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0 V, I_D = 250 \mu A$	BV_{DSS}	100	-	-	V
Drain-Source Leakage Current	$V_{DS} = 100 V, V_{GS} = 0 V$	I_{DSS}	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 20 V, V_{DS} = 0 V$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu A$	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance (Note 3)	$V_{GS} = 10 V, I_D = 20 A$	$R_{DS(on)}$	-	4.5	5.6	m Ω
Forward Transconductance	$V_{DS} = 5 V, I_D = 65 A$	gfs	-	130	-	S
Input Capacitance	$V_{DS}=50 V, V_{GS}=0V, f=1MHz$	C_{iss}	-	4350	-	pF
Output Capacitance		C_{oss}	-	2150	-	pF
Reverse Transfer Capacitance		C_{rss}	-	220	-	pF
Turn-on Delay Time(Note2)	$V_{DD}=50 V, V_{GS}=10 V, RG=3, ID=65A$	$t_{d(ON)}$	-	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)	$V_{DS}=50V, V_{GS}=10V, ID=65A$	Q_G	-	110	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	33	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	30	-	nC

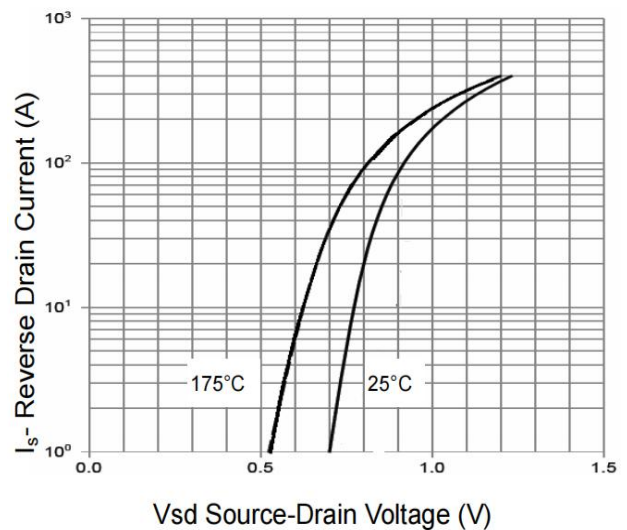
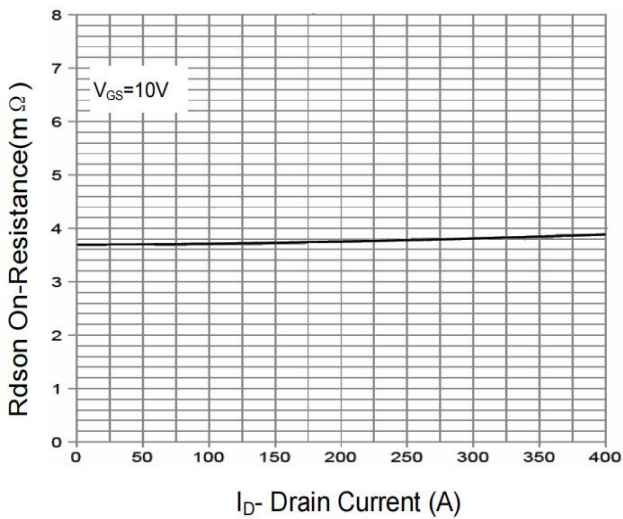
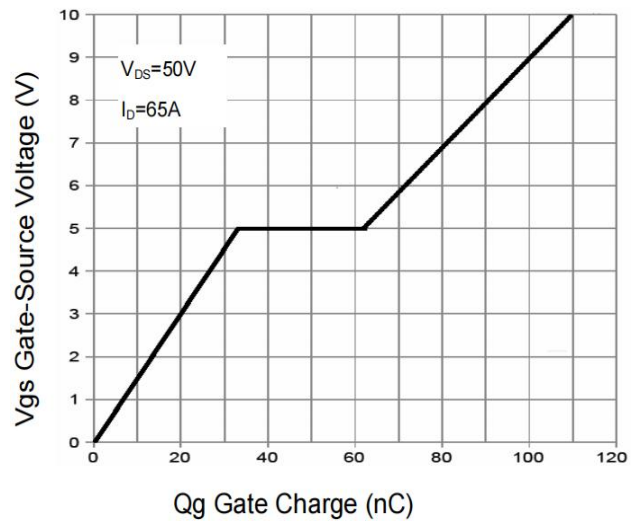
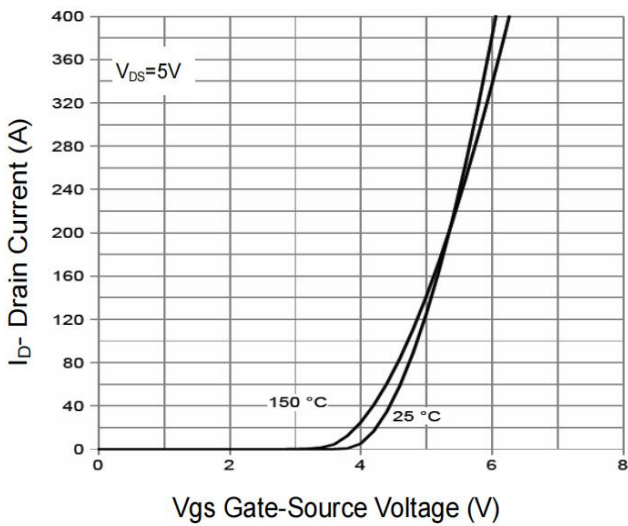
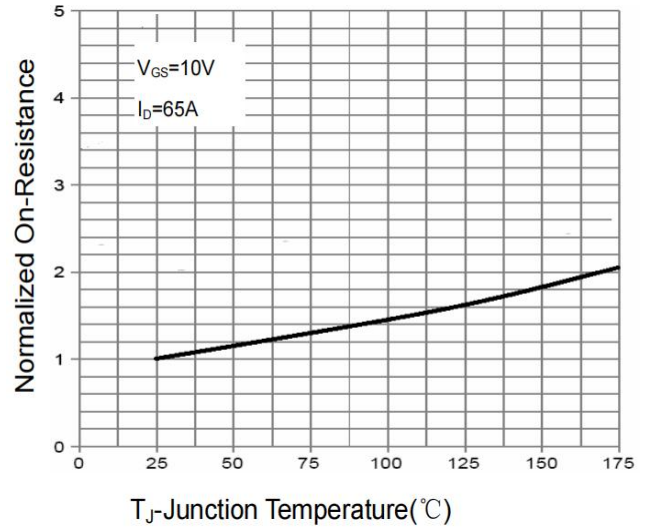
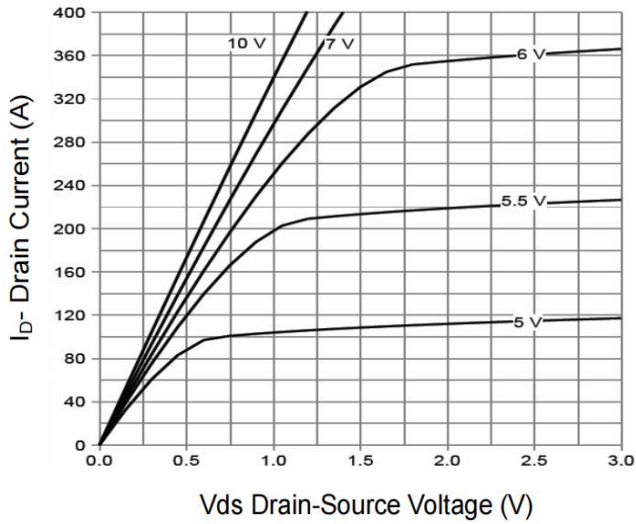
Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

Characteristics	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	120	A
Drain-Source Diode Forward Voltage	$V_{GS}=0V, I_S=40A, T_J=25^\circ C$	V_{SD}	-	0.86	1.2	V
Reverse Recovery Time(Note2)	$T_J = 25^\circ C, I_F = 65A, di / dt = 100 A/\mu s$	trr	-	70	-	ns
Reverse Recovery Charge(Note2)		Qrr	-	117	-	nC

Note2:Pulse test: 300 μ s pulse width, 2 % duty cycle

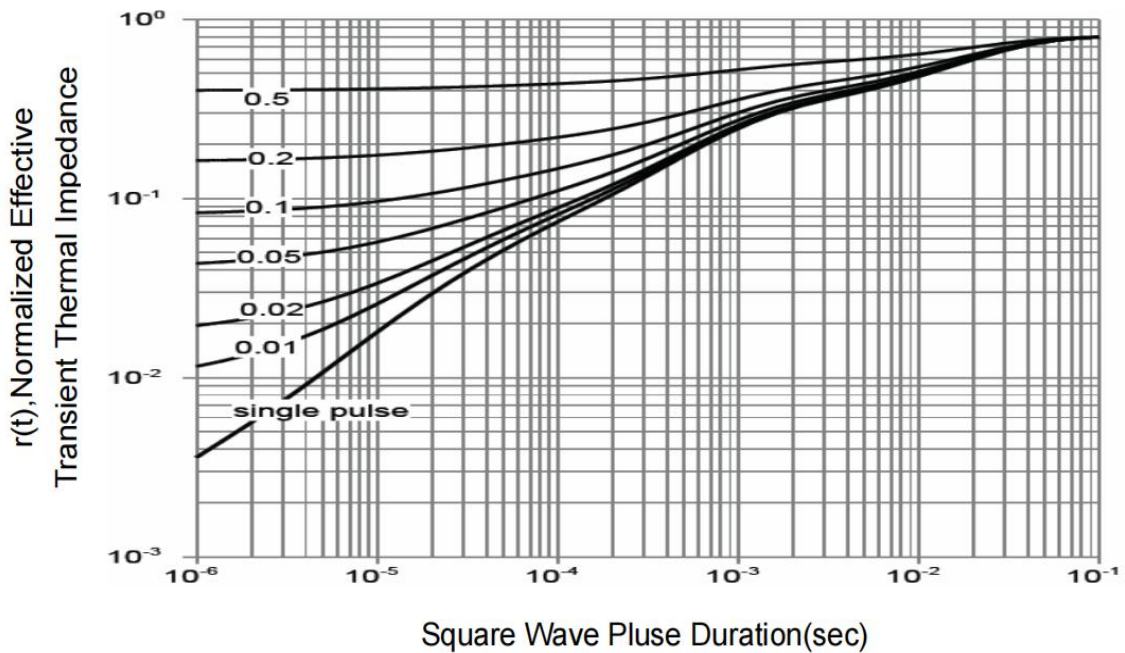
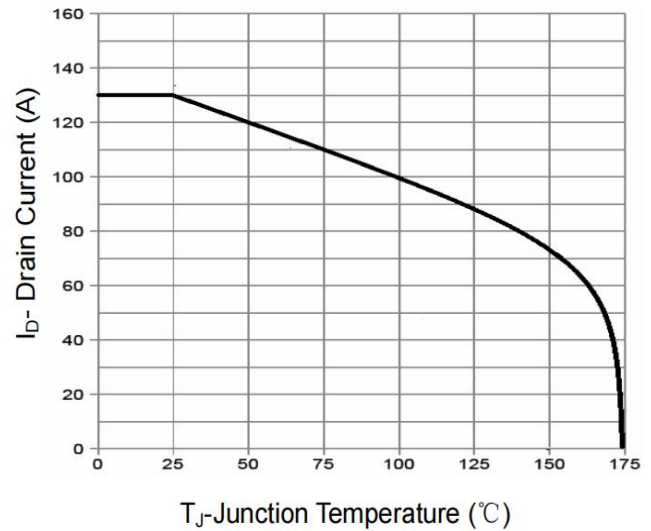
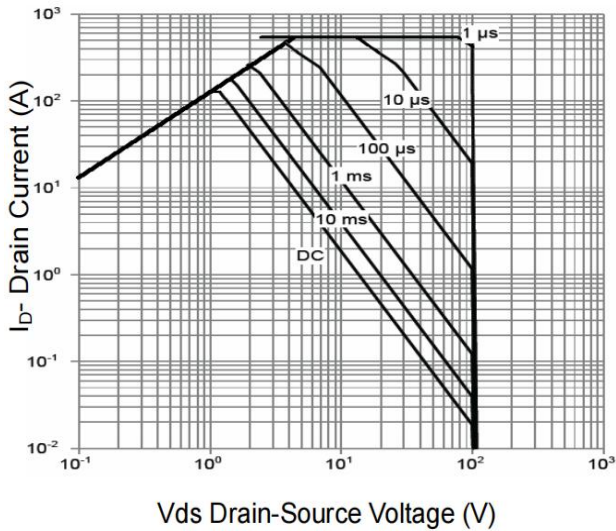
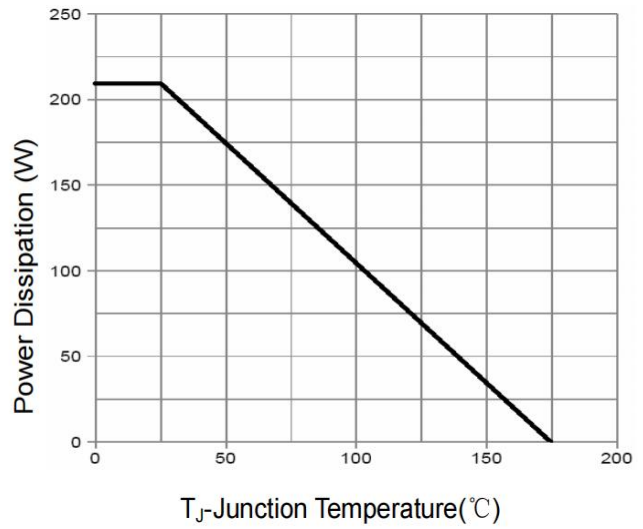
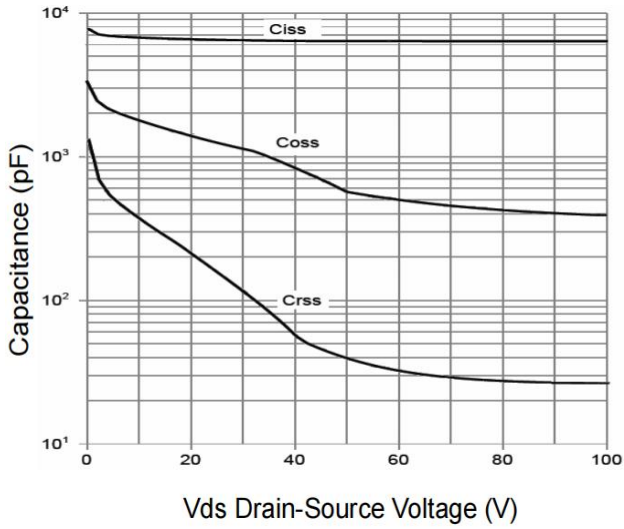


RATINGS AND CHARACTERISTIC CURVES



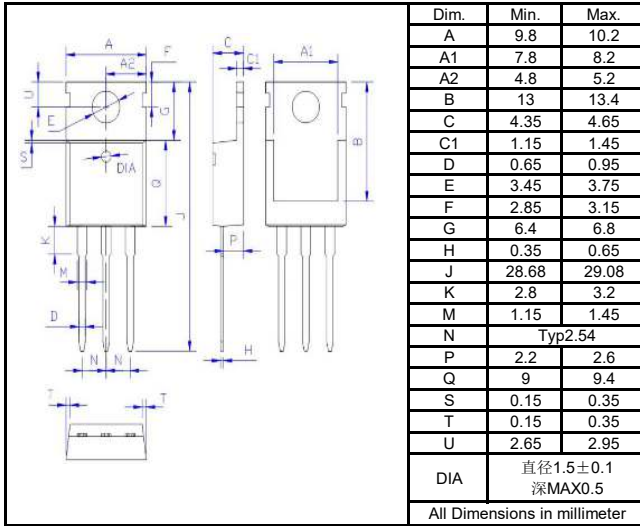


RATINGS AND CHARACTERISTIC CURVES



Package Outline Dimensions millimeters

T0-220C



T0-263C

