

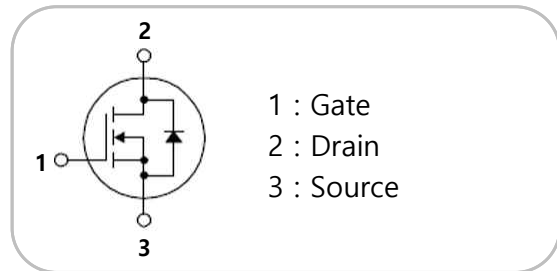
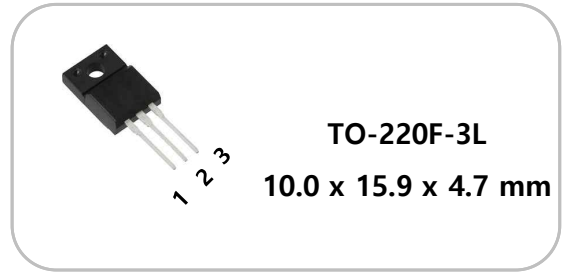
General description

Symbol	Value
V_{DSS} @ $T_C=25^\circ\text{C}$	Min 600V
I_D @ $T_C=25^\circ\text{C}$	2.0A
$R_{DS(on)}$	Max 4.7Ω
Q_G	Typ 7.0nC

Features

- Gate Charge(Typ. $Q_G=7.0\text{nC}$)
- High Voltage (Min. $V_{DSS}=600\text{V}$)
- 100% Avalanche Tested

Package



Maximum Ratings ($T_C = 25^\circ\text{C}$)

Parameter	Symbol	Test Condition	Value	Units
Drain-source voltage	V_{DSS}	$V_{GS}=0\text{V}$, $I_D=250\mu\text{A}$	600	V
Drain current (DC)	I_D	$T_C=25^\circ\text{C}$	2.00	A
		$T_C=100^\circ\text{C}$	1.35	A
Drain current (Pulsed)	I_{DM}	Pulse width limited by junction temperature	8.0	A
Gate-source voltage	V_{GS}	-	± 30	V
Single pulsed avalanche energy	E_{AS}	$I_{AS}=2.0\text{A}$, $R_G=25\Omega$, $V_{DD}=50\text{V}$, $L=59.5\text{mH}$	130	mJ
Power dissipation	P_D	$T_C=25^\circ\text{C}$	23	W
Operating junction	T_j	-	-55 to 150	$^\circ\text{C}$
Storage temperature	T_{stg}	-	-55 to 150	$^\circ\text{C}$




Electrical Characteristics (T_j = 25°C)

Parameter	Symbol	Test Condition				Units
			Min	Typ	Max	
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250uA	600	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =600V, V _{GS} =0V	-	-	1.0	uA
Gate-source leakage current	I _{GSS}	V _{GS} =±30V, V _{DS} =0V	-	-	±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	2.0	-	4.0	V
Drain-source on-state resistance	R _{DS(on)}	V _{GS} =10V, I _D =1.0A	-	3.9	4.7	Ω
Input capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f = 1MHz	-	250.0	334.0	pF
Output capacitance	C _{oss}		-	20.0	27.0	
Reverse transfer capacitance	C _{rss}		-	3.4	4.6	
Total gate charge	Q _G	V _{DS} =480V, V _{GS} =10V, I _D =2.0A	-	7.0	9.5	nC
Gate-source charge	Q _{GS}		-	1.5	-	
Gate-drain charge	Q _{GD}		-	4.7	-	
Turn on delay time	t _{d(on)}	V _{DD} =300V, I _D =2.0A, R _G =25Ω	-	9	-	ns
Rise time	t _r		-	25	-	
Turn off delay time	t _{d(off)}		-	24	-	
Fall time	t _f		-	28	-	




Body Diode(Source – Drain) Electrical Characteristics (T_j = 25°C)

Parameter	Symbol	Test Condition	Value			Units
			Min	Typ	Max	
Continuous diode forward current	I _S	-	-	-	2.0	A
Maximum pulsed drain to source diode forward current	I _{SM}	-	-	-	8.0	A
Forward voltage	V _{SD}	I _{SD} =2.0A, V _{GS} =0V	-	-	1.4	V
Reverse recovery time	t _{rr}	I _{SD} =2.0A, V _{GS} =0V di/dt=100A/μs	-	230.0	-	ns
Reverse recovery charge	Q _{rr}		-	1.0	-	uC

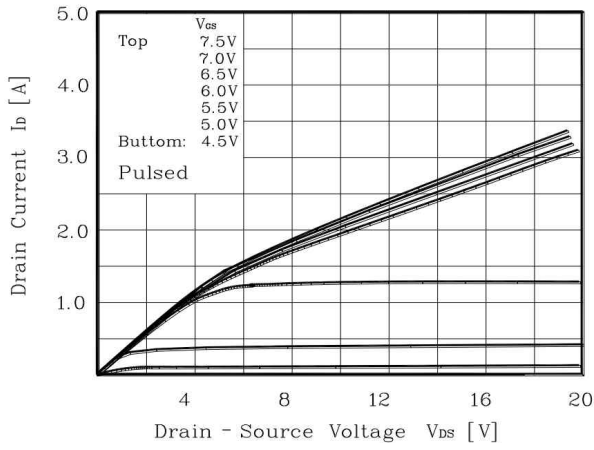

Thermal Characteristics(T_C = 25°C)

Symbol	Parameter	Typ	Max	Units
R _{th(j-c)}	Junction to case	-	5.5	°C/W

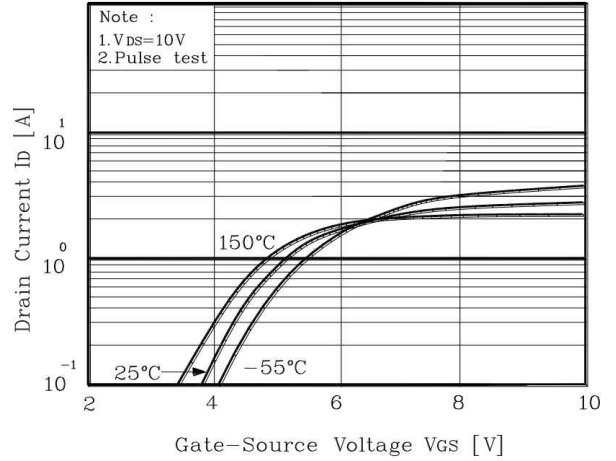


Typical Electrical Characteristics Curves (T_j = 25°C)

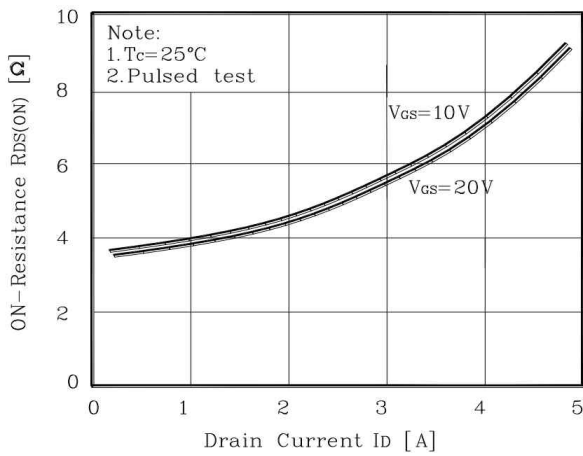
V_{DS} – I_D Characteristics



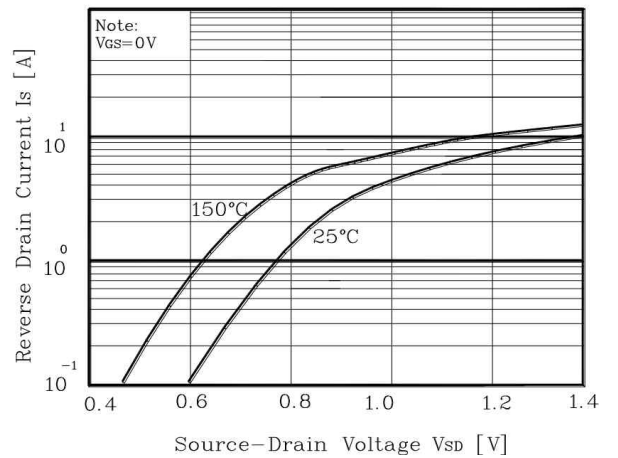
V_{GS} – I_D Characteristics



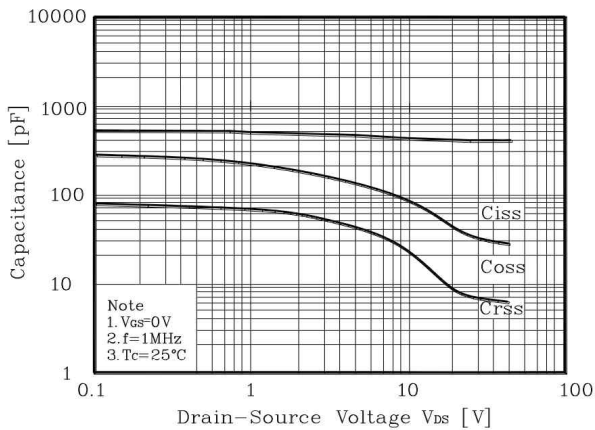
I_D – R_{DS(on)} Characteristics



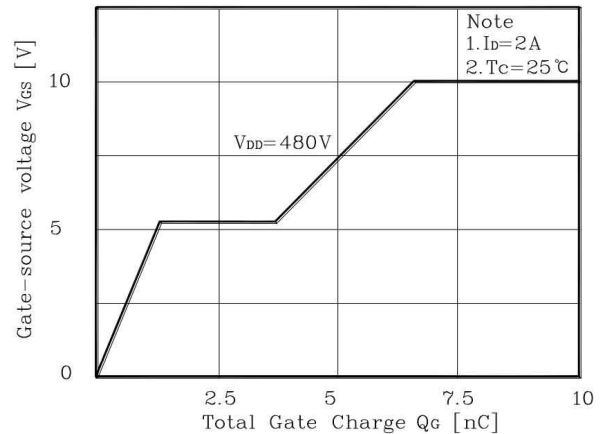
V_{SD} – I_S Characteristics



V_{DS} – C_T Characteristics

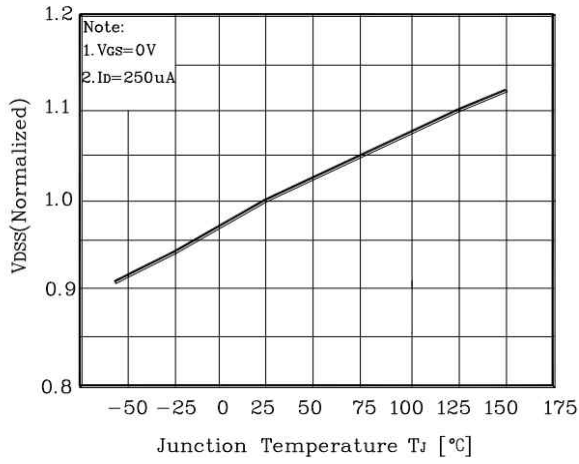


Q_g – V_{GS} Characteristics

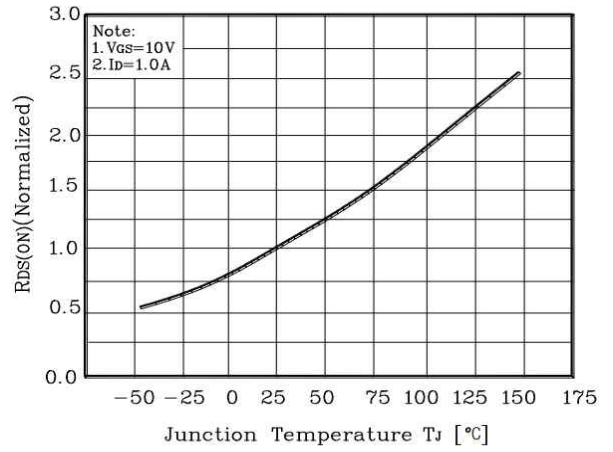


Typical Electrical Characteristics Curves ($T_j = 25^\circ\text{C}$)

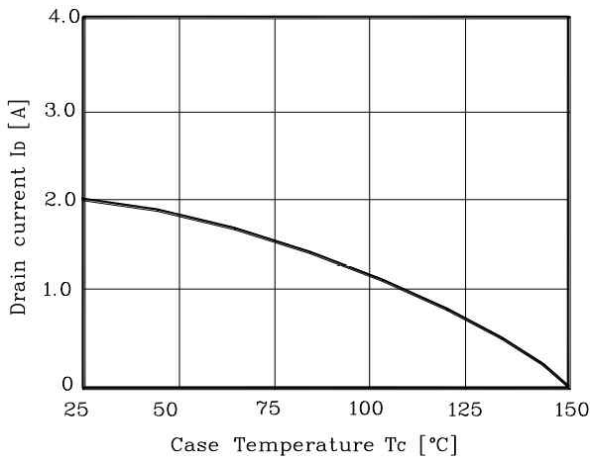
$T_j - V_{DSS}(\text{Normalized})$ Characteristics



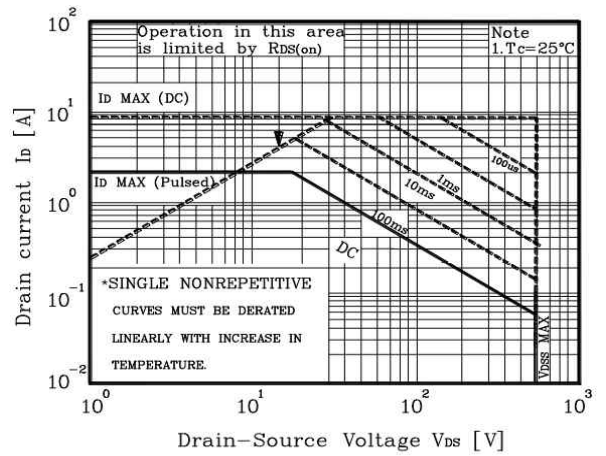
$T_j - R_{DS(on)}(\text{Normalized})$ Characteristics



$T_c - I_D$ Characteristics



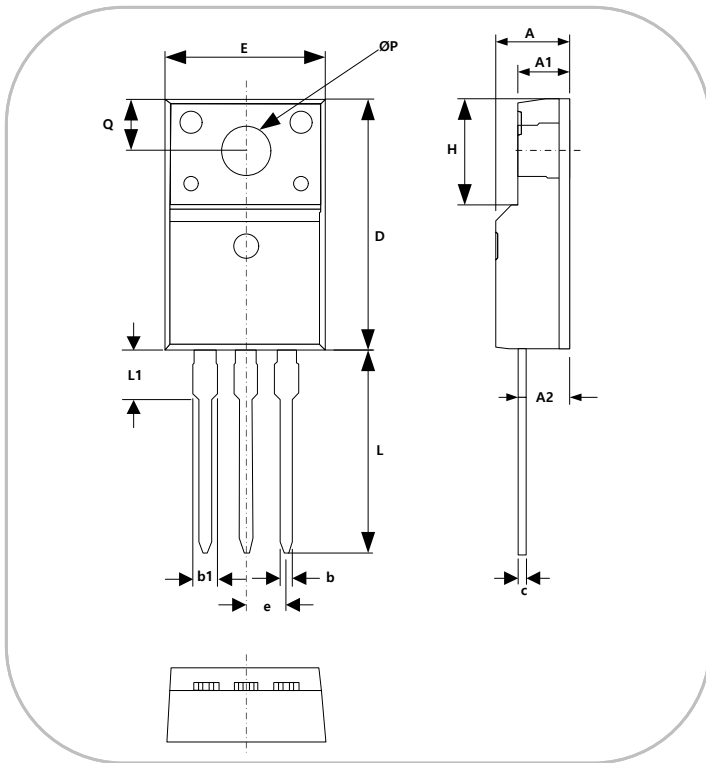
SOA Characteristics



Package Dimensions(TO-220F-3L)

[Unit : mm]

SYMBOL	MIN	MAX
A	4.50	4.90
A1	2.34	2.74
A2	2.56	2.96
b	0.70	0.90
b1	1.27	1.47
c	0.45	0.60
D	15.67	16.07
E	9.96	10.36
e	2.54 BSC	
H	6.48	6.88
L	12.68	13.28
L1	3.03	3.43
φP	3.08	3.28
Q	3.20	3.40



Marking Information

