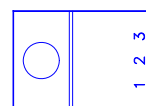
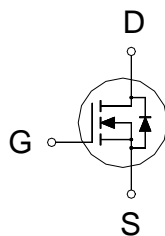


NIKO-SEM**N-Channel Enhancement Mode
Field Effect Transistor****P1615AT****TO-220****Halogen-Free & Lead-Free****PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
150	16m Ω	62A



1. GATE
2. DRAIN
3. SOURCE

100% UIS tested**ABSOLUTE MAXIMUM RATINGS ($T_C = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)**

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	62	A
	$T_C = 100\text{ }^\circ\text{C}$		39	
Pulsed Drain Current ¹		I_{DM}	240	
Avalanche Current		I_{AS}	62	
Avalanche Energy	$L = 0.3\text{mH}$	E_{AS}	585	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	125	W
	$T_C = 100\text{ }^\circ\text{C}$		50	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^\circ\text{C}$
Lead Temperature (¹ / ₁₆ " from case for 10 sec.)		T_L	275	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		1	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.**ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$, Unless Otherwise Noted)**

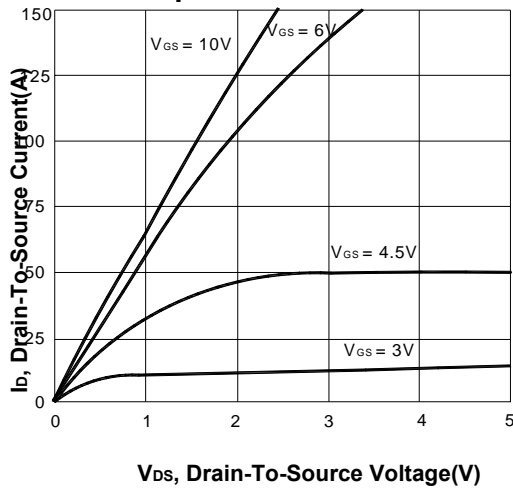
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	150			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.5	2.3	4.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			± 250	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 80\text{V}, V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = 80\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ }^\circ\text{C}$			10	

NIKO-SEM**N-Channel Enhancement Mode
Field Effect Transistor****P1615AT****TO-220****Halogen-Free & Lead-Free**

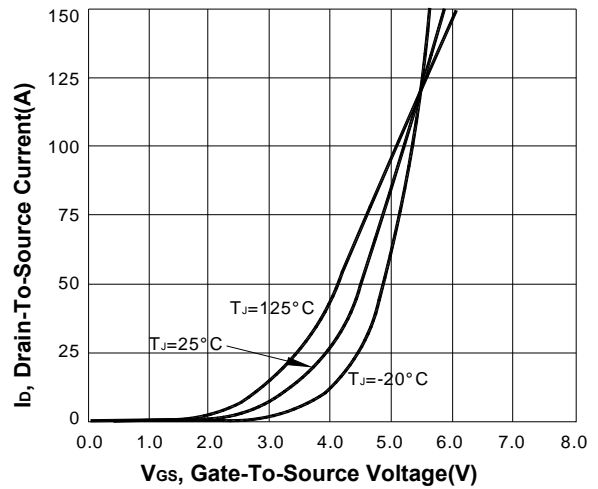
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 10V, V_{GS} = 10V$	62			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 50A$		13	16	m Ω
Forward Transconductance ¹	g_{fs}	$V_{DS} = 25V, I_D = 50A$		100		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		12600		pF
Output Capacitance	C_{oss}			852		
Reverse Transfer Capacitance	C_{rss}			343		
Total Gate Charge ²	Q_g	$V_{DS} = 75V, V_{GS} = 10V,$ $I_D = 35A$		222		nC
Gate-Source Charge ²	Q_{gs}			67		
Gate-Drain Charge ²	Q_{gd}			74		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 75V,$ $I_D \cong 35A, V_{GS} = 10V, R_{GEN} = 25\Omega$		25		nS
Rise Time ²	t_r			220		
Turn-Off Delay Time ²	$t_{d(off)}$			100		
Fall Time ²	t_f			120		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)						
Continuous Current	I_S			62		A
Forward Voltage ¹	V_{SD}	$I_F = 50A, V_{GS} = 0V$		1.3		V
Reverse Recovery Time	t_{rr}	$I_F = 35A, di_F/dt = 100A / \mu S$		100		nS
Reverse Recovery Charge	Q_{rr}			480		nC

¹Pulse test : Pulse Width $\leq 300 \mu\text{sec}$, Duty Cycle $\leq 2\%$.²Independent of operating temperature.**REMARK: THE PRODUCT MARKED WITH "P1615AT", DATE CODE or LOT #**

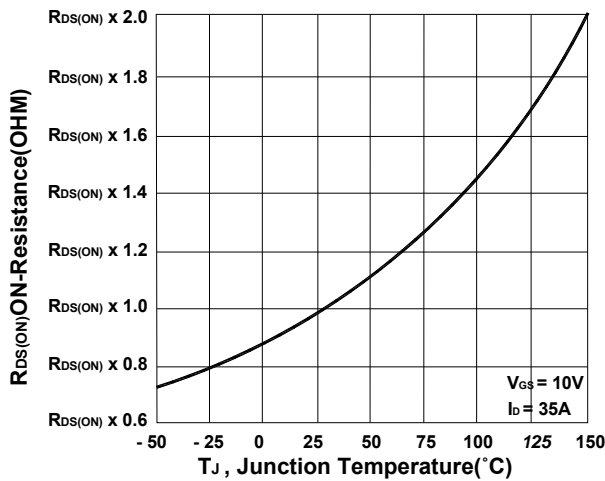
Output Characteristics



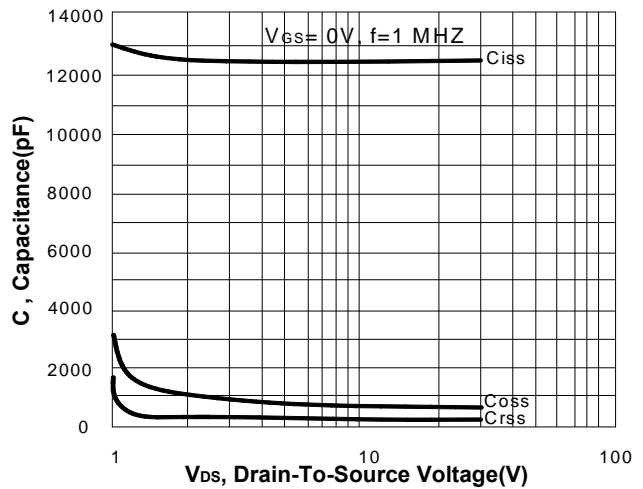
Transfer Characteristics



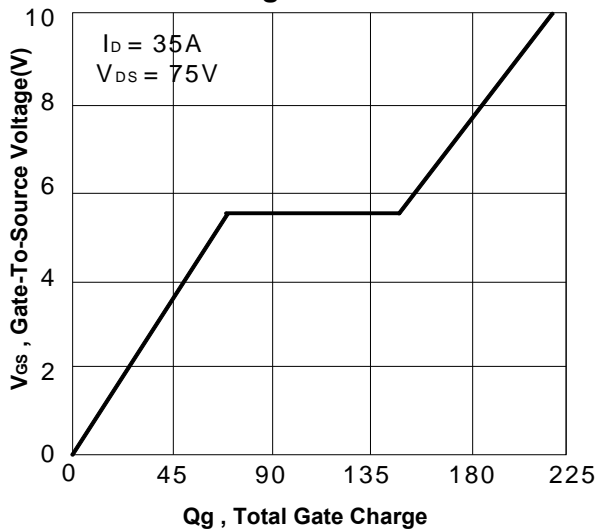
On-Resistance VS Temperature



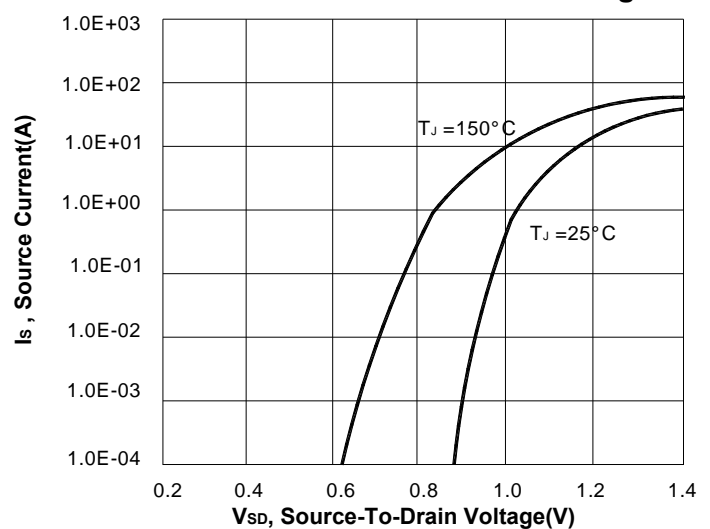
Capacitance Characteristic



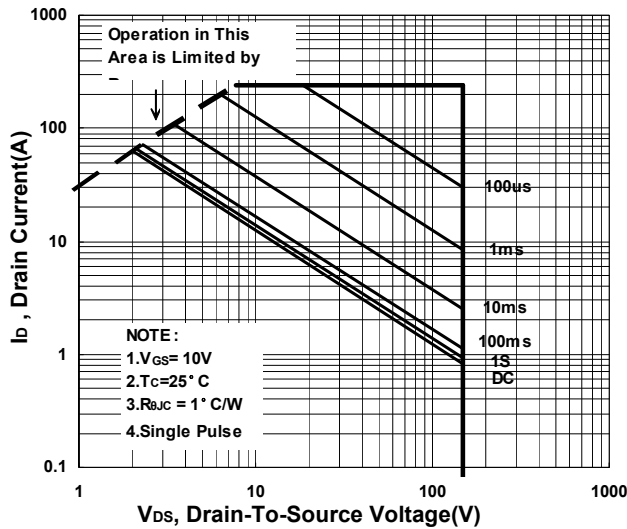
Gate charge Characteristics



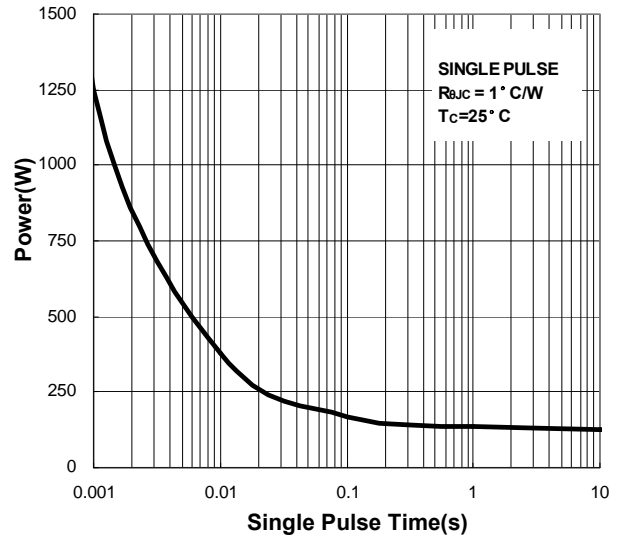
Source-Drain Diode Forward Voltage



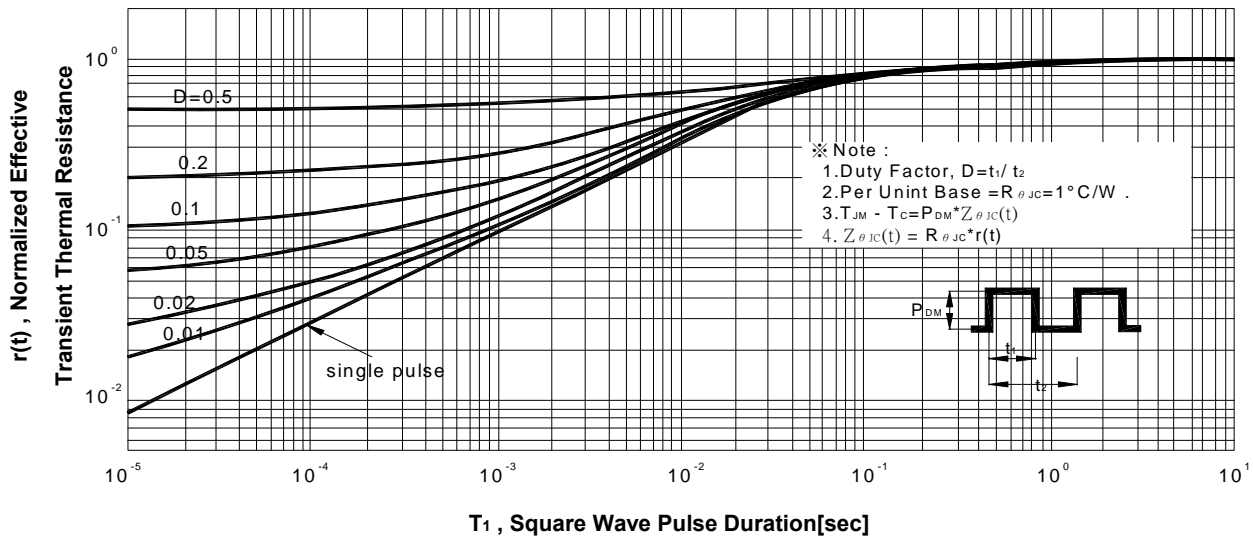
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



TO-220 (3-Lead) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	9.8	11.5		H	2.04	2.54	3.04
B	2.59	2.79	2.99	I	1.17	1.27	1.47
C	19.05	19.35	19.65	J	4.24	4.44	4.8
D	27.67	29	29.8	K	1.11	1.26	1.45
E	14.7	15	15.75	L	2.59		2.8
F	8.4	8.6	9.25	M	0.34	0.5	0.6
G	0.66	0.76	1.32	N			

