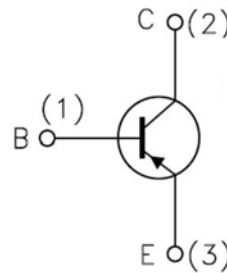
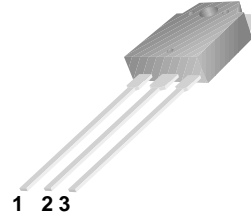




TO-3P



- 1. Base (B)
- 2. Collector (C)
- 3. Emitter (E)

JSM3N150P

- Low Intrinsic Capacitances.
- Excellent Switching Characteristics.
- Extended Safe Operating Area.
- Unrivalled Gate Charge: $Q_g = 64\text{nC}$ (Typ.).
- $BV_{DSS} = 1500\text{V}, I_D = 3\text{A}$
- $R_{DS(on)} : 7.5\Omega$ (Max) @ $V_G = 10\text{V}$
- 100% Avalanche Tested

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

Symbol	Parameter	Value	Unit
V_{DSS}	Drain-Source Voltage	1500	V
I_D	Drain Current	$T_C = 25^\circ\text{C}$	3.0
		$T_C = 100^\circ\text{C}$	1.6
$V_{GS(TH)}$	Gate Threshold Voltage	± 30	V
E_{AS}	Single Pulse Avalanche Energy (note1)	450	mJ
I_{AR}	Avalanche Current (note2)	3	A
P_D	Power Dissipation ($T_j = 25^\circ\text{C}$)	35	W
T_j	Junction Temperature (MAX)	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^\circ\text{C}$
TL	Maximum lead temperature for soldering purpose, 1/8" from case for 5 seconds	300	$^\circ\text{C}$

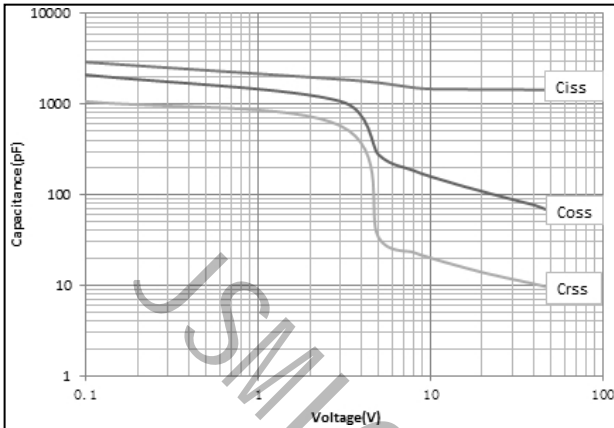
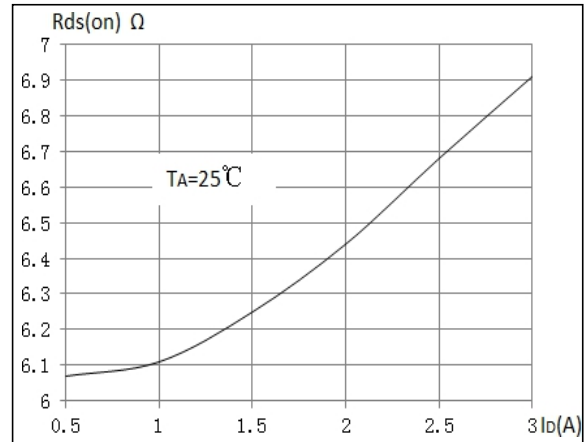
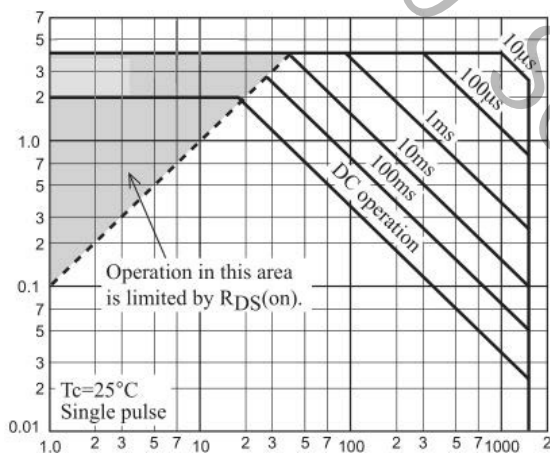
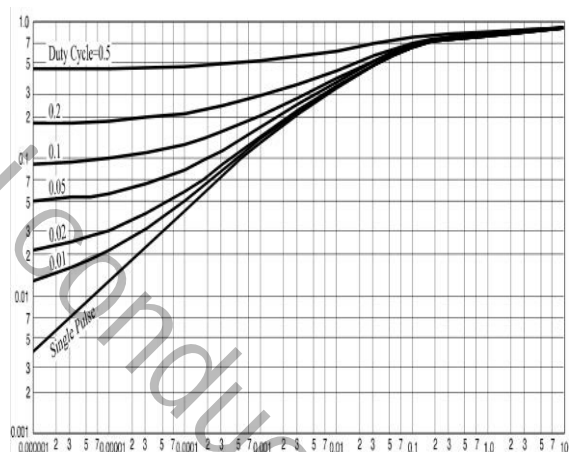
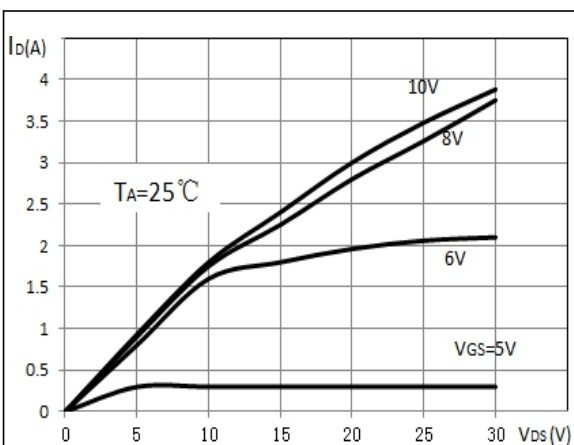
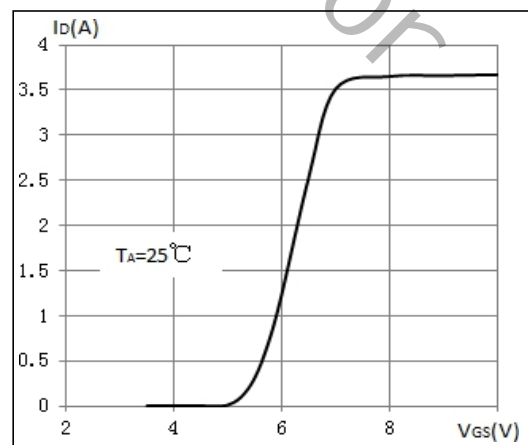
Thermal Characteristics

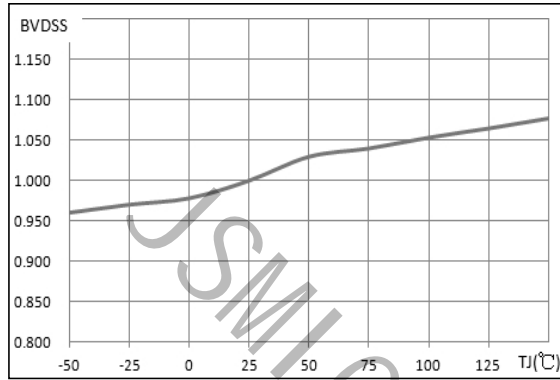
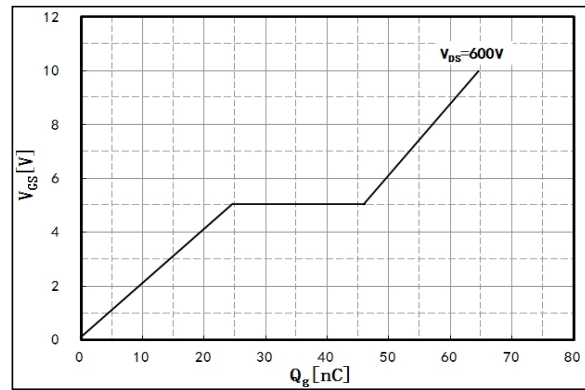
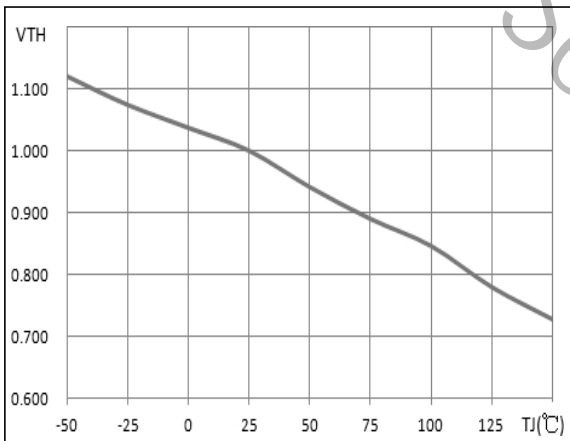
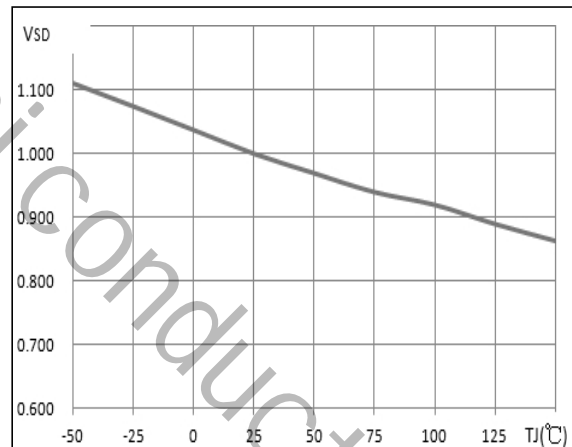
Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JC}$	Thermal Resistance, Junction to Case	-	4.4	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	-	62.5	$^\circ\text{C/W}$

Electrical Characteristics (Ta= 25°C unless otherwise noted)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	I _D =250μA, V _{GS} =0	1500	-	-	V
ΔBV _{DSS} /ΔT _J	Breakdown Voltage Temperature Coefficient	I _D =250μA, Reference to 25°C	-	0.5	-	V/°C
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =1500V, V _{GS} =0V	-	-	10	μA
		V _{DS} =1500V, T _C =125°C	-	-	500	
I _{GSSF}	Gate-body leakage Current, Forward	V _{GS} =+30V, V _{DS} =0V	-	-	100	nA
I _{GSSR}	Gate-body leakage Current, Reverse	V _{GS} =-30V, V _{DS} =0V	-	-	-100	
On Characteristics						
V _{GS(TH)}	Gate Threshold Voltage	I _D =250μA, V _{DS} =V _{GS}	3	-	5	V
R _{DS(ON)}	Static Drain-Source On-Resistance	I _D =1.3A, V _{GS} =10V	-	6.1	7.5	Ω
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0, f=1.0MHz	-	1450	-	pF
C _{oss}	Output Capacitance		-	101	-	
C _{rss}	Reverse Transfer Capacitance		-	40	-	
Switching Characteristics						
T _{d(on)}	Turn-On Delay Time	V _{DD} =600V, I _D =1.25A, R _G =25Ω (Note 3,4)	-	35	-	ns
T _r	Turn-On Rise Time		-	47	-	
T _{d(off)}	Turn-Off Delay Time		-	95	-	
T _f	Turn-Off Rise Time		-	44	-	
Q _g	Total Gate Charge	V _{DS} =600V, V _{GS} =10V, I _D =2.5A (Note 3,4)	-	64	-	nC
Q _{gs}	Gate-Source Charge		-	9.1	-	
Q _{gd}	Gate-Drain Charge		-	33	-	
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Max. Diode Forward Current	-	-	-	3	A
I _{SM}	Max. Pulsed Forward Current	-	-	-	10	
V _{SD}	Diode Forward Voltage	I _D =2.5A	-	-	1.6	V
T _{rr}	Reverse Recovery Time	I _S =2.5A, V _{GS} =0V diF/	-	1475	-	nS
Q _{rr}	Reverse Recovery Charge	dt=100A/μs (Note3)	-	3.53	-	μC

- Notes : 1, L=20.8mH, I_{AS}=3A, V_{DD}=50V, R_G=25Ω, Starting T_J =25°C
 2, Repetitive Rating : Pulse width limited by maximum junction temperature
 3, Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%
 4, Essentially Independent of Operating Temperature

Typical Characteristics
Capacitance Characteristics

On-Resistance Variation vs. Id

Maximum Safe Operating Area

Thermal impedance

Output characteristics

Transfer characteristics


Typical Characteristics (Continued)
Normalized BVDSS vs. temperature

Gate charge vs. V_{GS}

Normalized V_{TH} vs. temperature

Normalized VSD vs. temperature


Package Dimension

TO-3P

Unit:mm

