

SE3N150P

N-Channel Enhancement-Mode MOSFET

Revision: A

General Description

This series is a high voltage power MOSFET and is designed to have better characteristics, such as fast switching time, low gate charge, low on-state resistance and have a high rugged avalanche characteristics

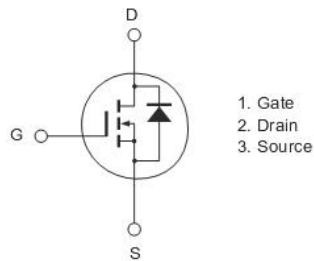
Features

For a single MOSFET

- $V_{DS} = 1500V$
- $R_{DS(ON)} = 6\Omega @ V_{GS}=10V$

Pin configurations

See Diagram below



Absolute Maximum Ratings

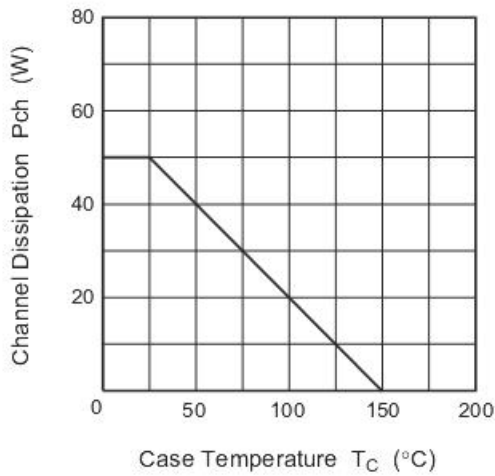
Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	1500	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current	Continuous	I_D	3	A
	Pulsed		12	
Power Dissipation		P_D	63	W
Operating Junction Temperature Range		T_J	-55 to 150	$^{\circ}C$

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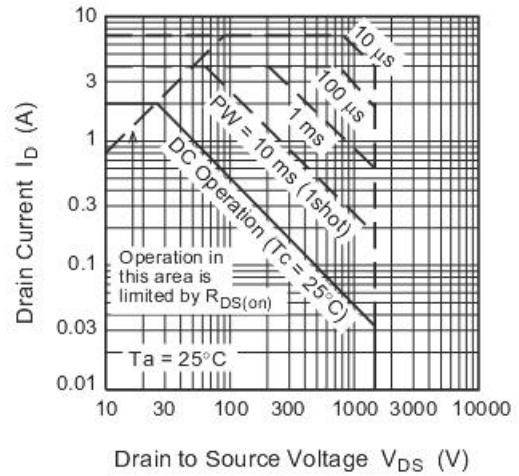
Electrical Characteristics (T _J =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS (Note 2)						
B _V DSS	Drain-Source Breakdown Voltage	V _{GS} =0 V, I _D =250μA,	1500			V
I _{DSS}	Drain to Source Leakage Current	V _{DS} =1200V, V _{GS} =0V			1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =20V			100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D =250μA	3.0		5.0	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =1.5A		6	7.2	Ω
DYNAMIC PARAMETERS						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =25V, f=1MHz		1348		pF
C _{oss}	Output Capacitance			101		pF
C _{rss}	Reverse Transfer Capacitance			15		pF
SWITCHING PARAMETERS						
t _{d(on)}	Turn-On Delay Time	V _{DS} =750V, R _L =25Ω I _D =3.0A		45		ns
t _{d(off)}	Turn-Off Delay Time			224		ns
t _{d(r)}	Turn-On Rise Time			22.5		ns
t _{d(f)}	Turn-Off Fall Time			55.5		ns
Source-Drain Diode Characteristics						
V _{SD}	Drain-Source Diode Forward Voltage	V _{GS} =0V, I _S =2A			1.4	V
t _{rr}	Reverse Recovery Time	V _{GS} =0V, I _S =3.0A dI _F /dt=100A/μs ¹		647.5		ns

Typical Characteristics

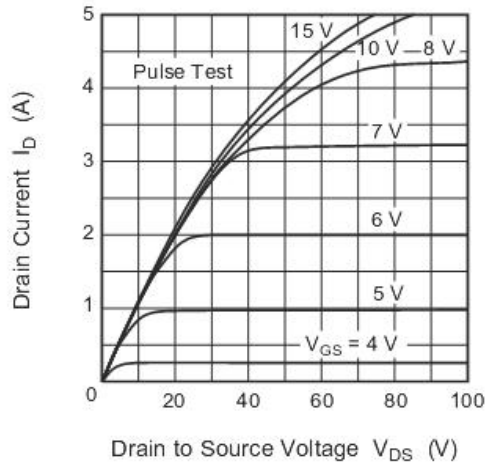
Power vs. Temperature Derating



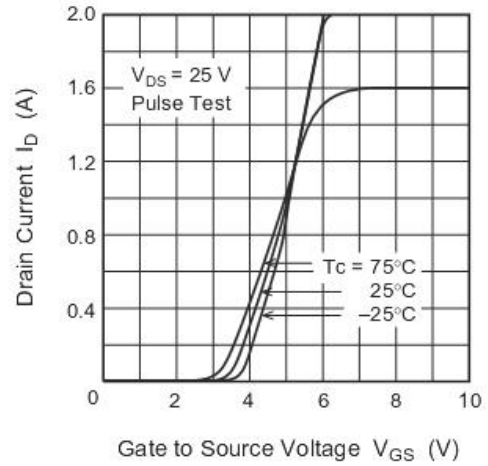
Maximum Safe Operation Area



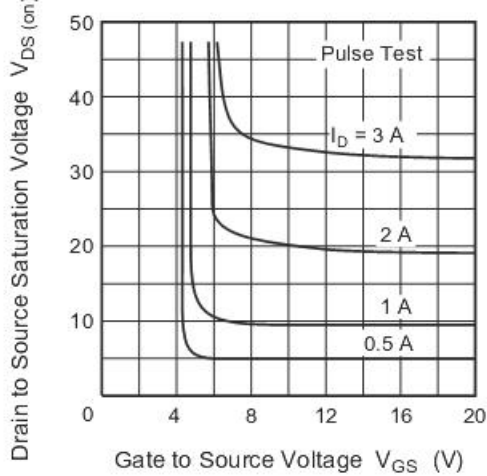
Typical Output Characteristics



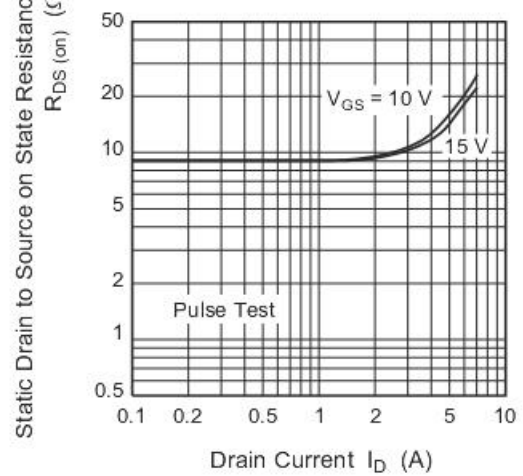
Typical Transfer Characteristics



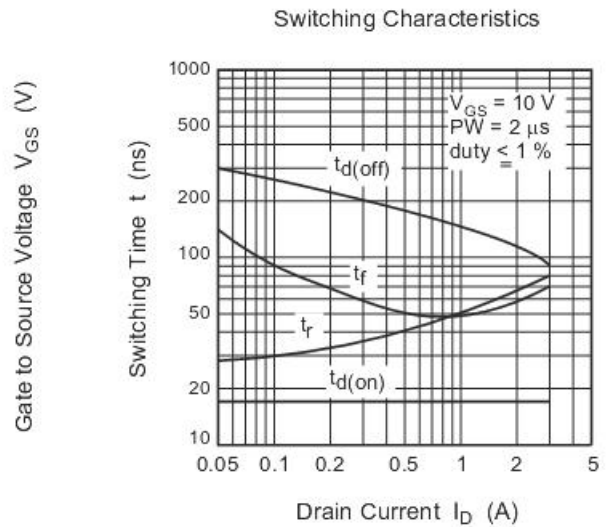
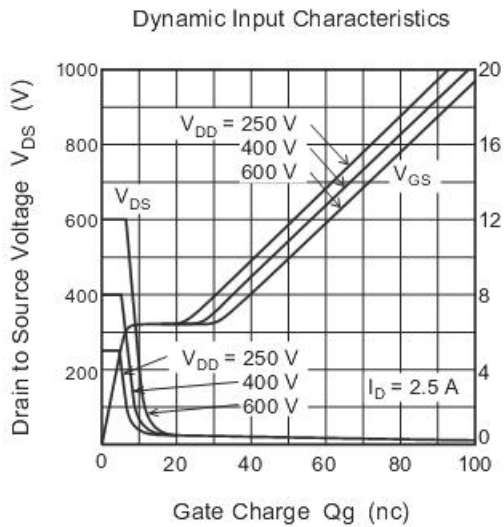
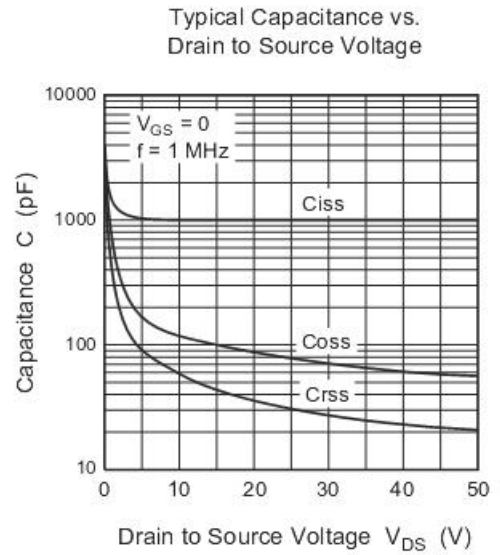
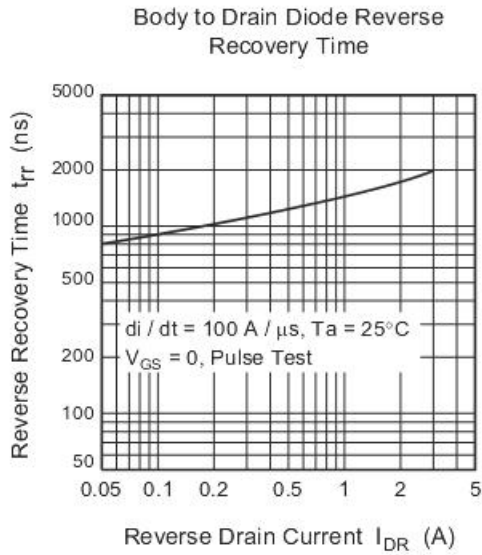
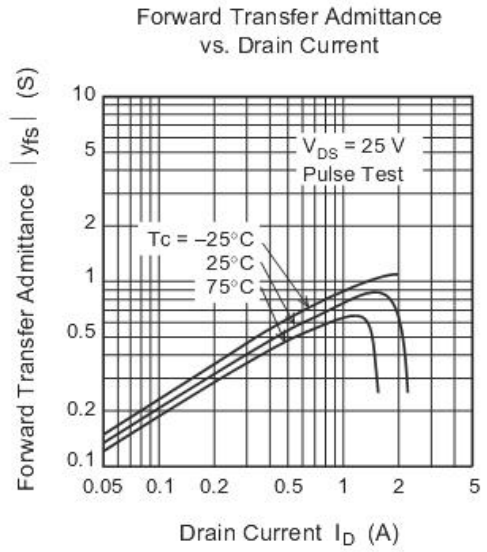
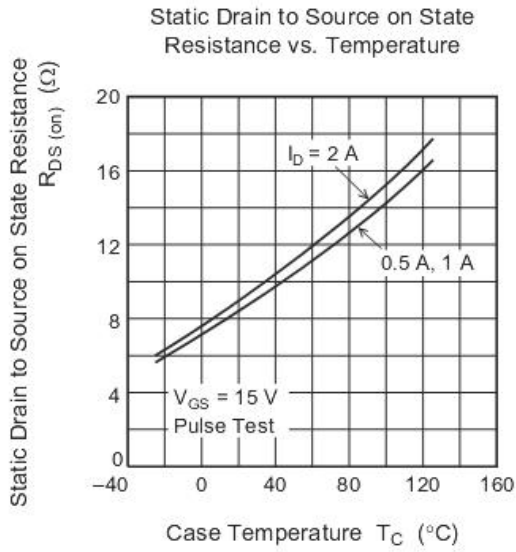
Drain to Source Saturation Voltage vs. Gate to Source Voltage



Static Drain to Source on State Resistance vs. Drain Current



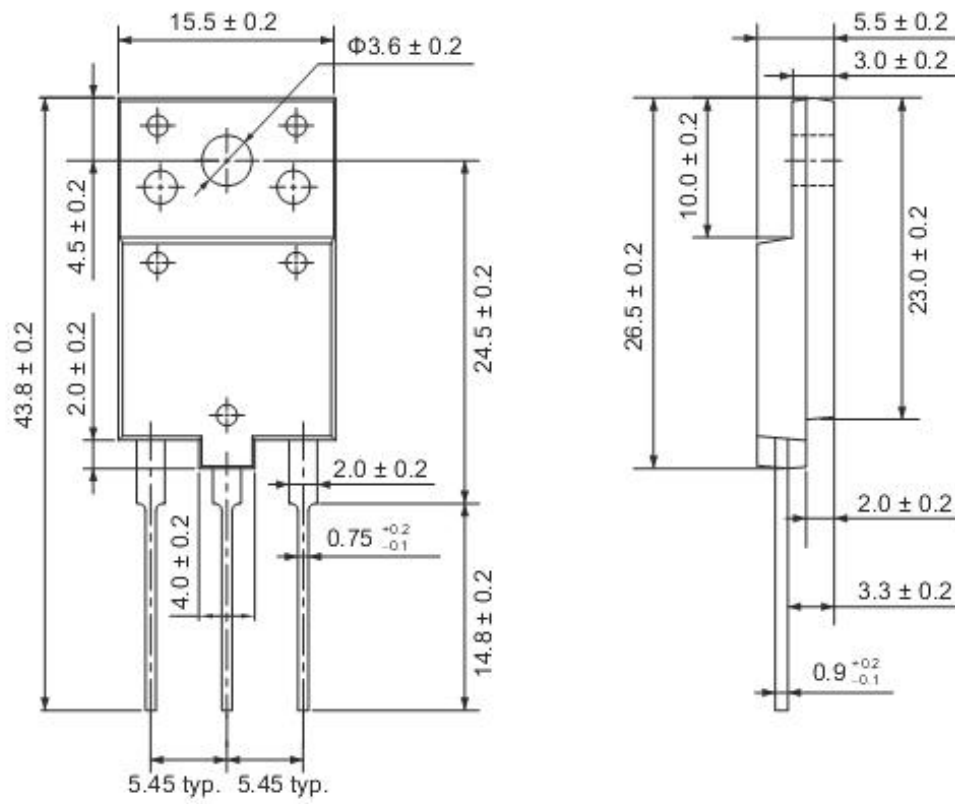
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Package Outline Dimension

TO-3P



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