

isc N-Channel MOSFET Transistor

STW45NM60

• FEATURES

- High dv/dt and avalanche capabilities
- Low input capacitance and gate charge
- Low gate input resistance
- 100% avalanche tested
- Tight process control and high manufacturing yields
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• APPLICATIONS

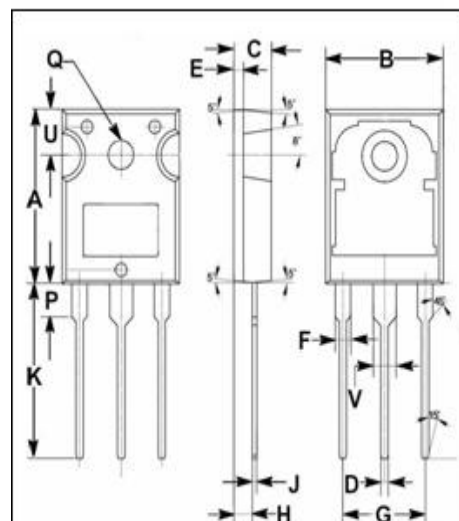
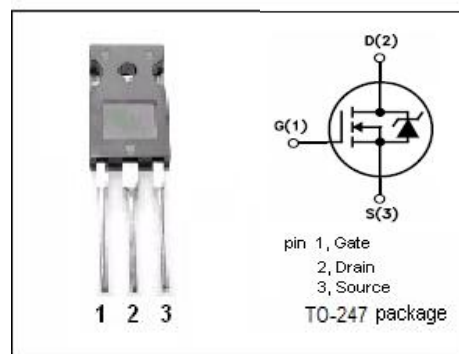
- Switching application

• ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{DS}	Drain-Source Voltage	600	V
V_{GS}	Gate-Source Voltage	± 30	V
I_D	Drain Current-Continuous@ $T_c=25^{\circ}\text{C}$ $T_c=100^{\circ}\text{C}$	45 28	A
I_{DM}	Drain Current-Single Pulsed	180	A
P_D	Total Dissipation	417	W
T_{ch}	Max. Operating Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-65~150	$^{\circ}\text{C}$

• THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(ch-c)}$	Channel-to-case thermal resistance	0.3	$^{\circ}\text{C/W}$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	30	$^{\circ}\text{C/W}$



	mm	
DIM	MIN	MAX
A	19.80	20.20
B	15.40	15.80
C	4.90	5.10
D	0.90	1.10
E	1.40	1.60
F	1.90	2.10
G	10.80	11.00
H	2.40	2.60
J	0.50	0.70
K	19.50	20.50
P	3.90	4.10
Q	3.30	3.50
U	5.20	5.40
V	2.90	3.10

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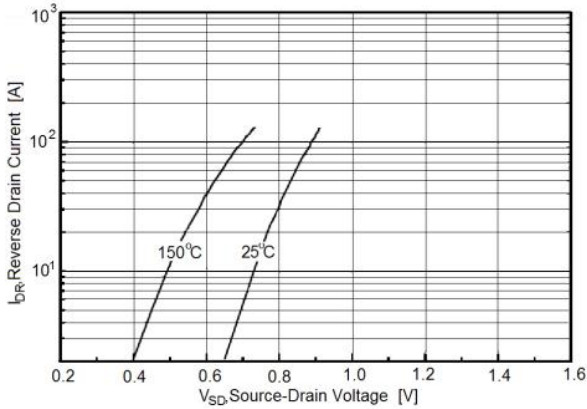
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ELECTRICAL CHARACTERISTICS

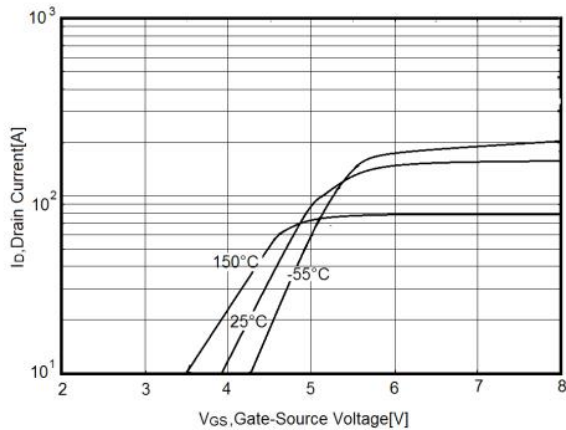
$T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V; I_D=0.25mA$	600			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}= \pm 30V; I_D=0.25mA$	3		5	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}= 10V; I_D=22.5A$		90	110	$m\Omega$
I_{GSS}	Gate-Source Leakage Current	$V_{GS}= \pm 30V; V_{DS}= 0V$			± 0.1	μA
I_{DSS}	Drain-Source Leakage Current	$V_{DS}= 600V; V_{GS}= 0V; T_J=25^{\circ}\text{C}$ $T_J=125^{\circ}\text{C}$			10 100	μA
V_{SDF}	Diode forward voltage	$I_{SD}=45A, V_{GS}= 0 V$			1.5	V

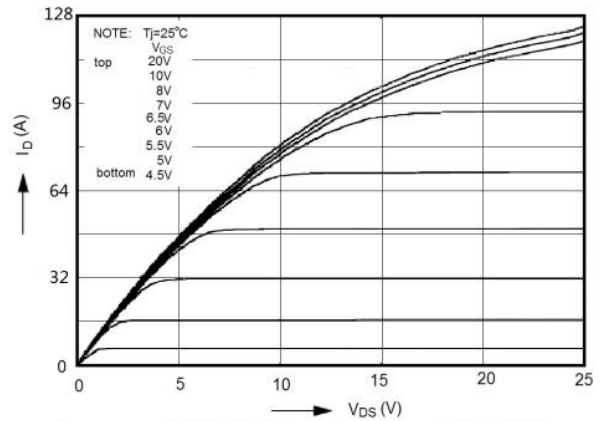
Source-Drain Diode Forward Voltage



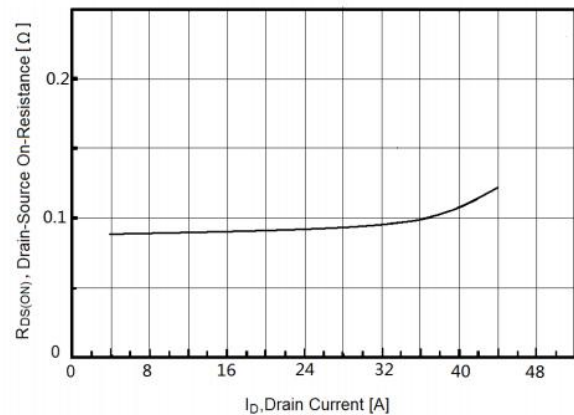
Transfer characteristics

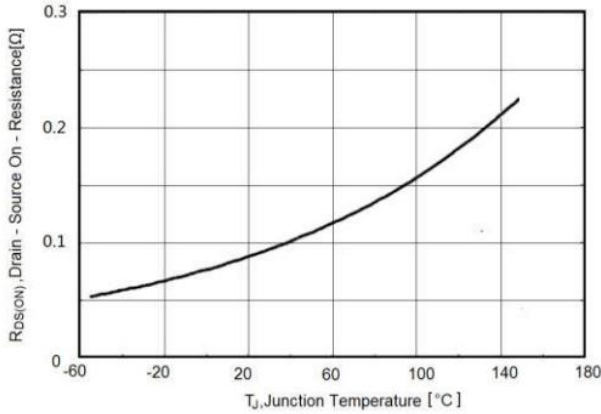
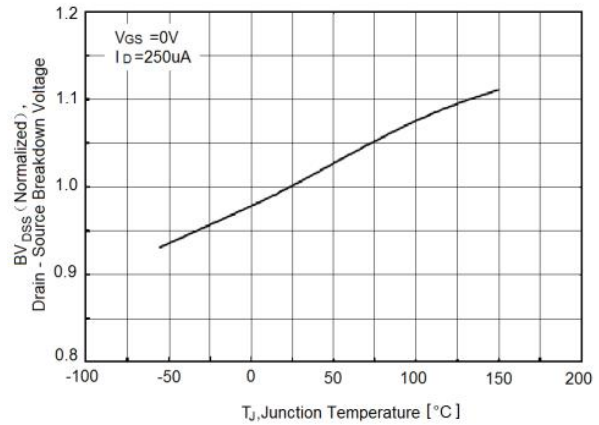


Output characteristics



Static drain-source on resistance



isc N-Channel MOSFET Transistor**STW45NM60** **$R_{DS(ON)}$ vs Junction Temperature** **BV_{DSS} vs Junction Temperature****NOTICE:**

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