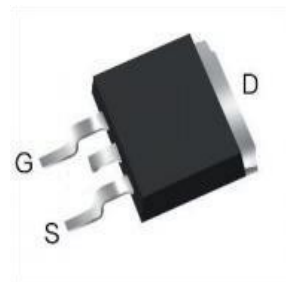




1.Features

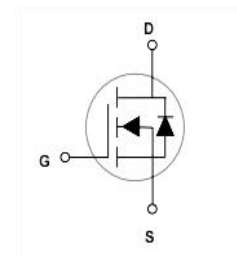
- V_{DS} 100V
- I_D 160A
- $R_{DS(on)}$ (at $V_{GS}=10V$) 3.2m Ω (Typ)

TO-263



2.Mechanical Data

- Case:Molded Plastic,TO-263;
- Epoxy:UL 94V-0 rate flame retardant
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Marking: marked on body.
- Mounting Position : Any.



3.Maximum Ratings and Electrical Characteristics

Electrical Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

Characteristics		Symbol	Ratings		Unit
Drain-Source Voltage		V _{DS}	100		V
Gate-Source Voltage		V _{GS}	±20		V
Drain Current-Continuous	T _C =25°C	I _D	160		A
	T _C =100°C		125		
Maximum Power Dissipation		P _D	275		W
Single Pulsed Avalanche energy ⁽¹⁾		E _{AS}	1190		mJ
Junction and Storage Temperature Range		T _J , T _{stg}	-55 to +150		°C
Thermal Characteristics					
Parameter		Symbol	Typ	Max	Unit
Thermal Resistance, Junction-to-Case		R _{θJC}	-	0.5	°C/W
Thermal Resistance, Junction-to-Ambient		R _{θJA}	-	62	°C/W



Characteristics	Symbol	Test conditions	Min	TYP	Max	Unit
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V,I _D =250μA	100	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V,V _{GS} = 0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V,V _{DS} = 0V	-	-	100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =250μA	2	3	4	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =50A	-	3.2	4.2	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{iss}	V _{DS} =40V	-	7280	-	pF
Output Capacitance	C _{oss}	V _{GS} =0V	-	704	-	
Reverse Transfer Capacitance	C _{rss}	f=1.0MHZ	-	32.6	-	
SWITCHING PARAMETERS						
Turn-on Delay Time	t _{d(on)}	V _{DS} =50V, V _{GS} =10V R _L =3Ω; I _D =1A	-	32	-	nS
Turn-on Rise Time	t _r		-	45	-	
Turn-off Delay Time	t _{d(off)}		-	52	-	
Turn-off Fall Time	t _f		-	31	-	
Total Gate Charge	Q _g	V _{DS} =40V, I _D =50A V _{GS} =10V	-	95	-	nC
Gate-Source Charge	Q _{gs}		-	25	-	
Gate-Drain Charge	Q _{gd}		-	21	-	
Diode Forward Voltage	V _{SD}	I _{SD} =50A,V _{GS} =0V	-	-	1.2	V

Notes:

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. $V_{DD}=25V, V_{GS}=10V, L=0.5mH, I_{AS}=60A$., Starting $T_J=25^\circ C$
3. The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. Essentially independent of operating temperature.



4. Rating And Characteristic Curves

Fig.1 Continuous Drain Current vs. T_C

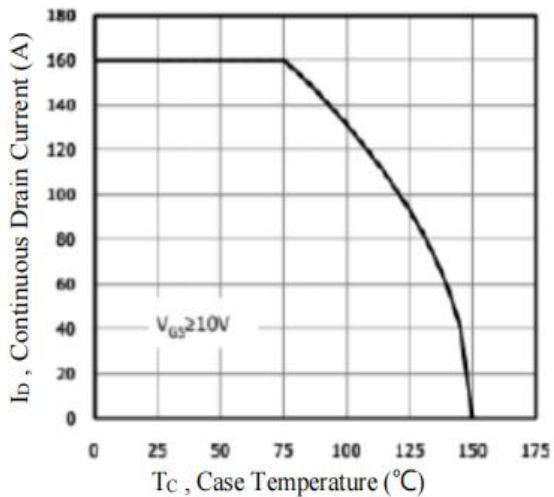


Fig.2 Normalized $R_{DS(on)}$ vs. T_J

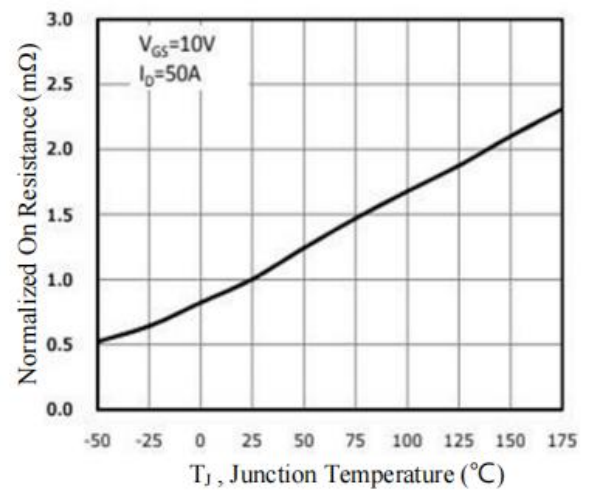


Fig.3 Normalized V_{th} vs. T_J

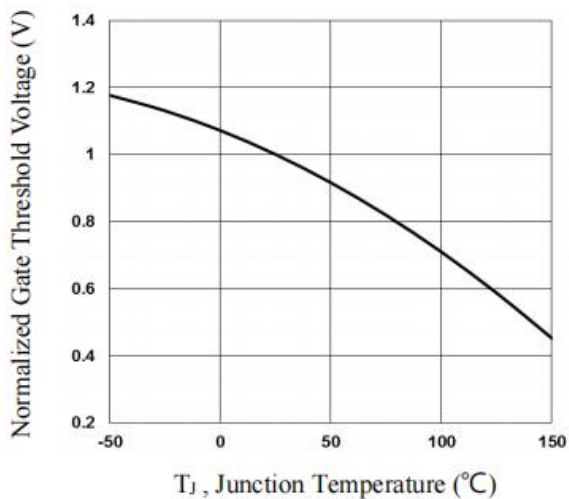


Fig.4 Gate Charge Waveform

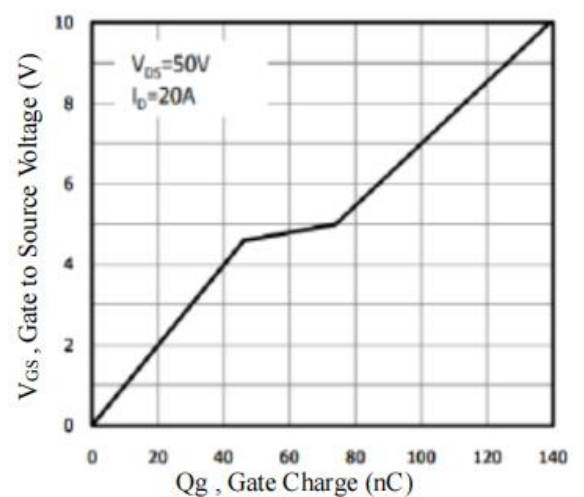


Fig.5 Normalized Transient Impedance

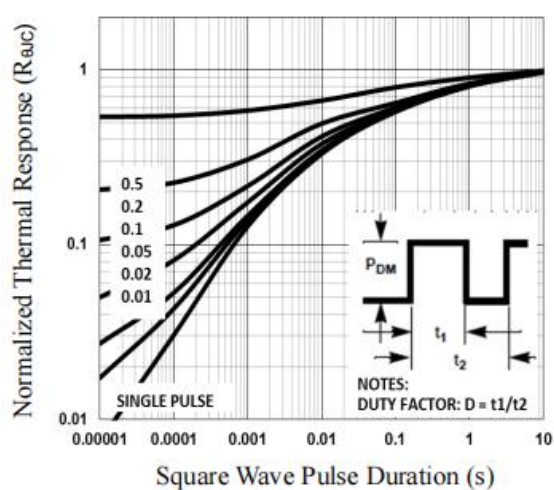


Fig.6 Maximum Safe Operation Area

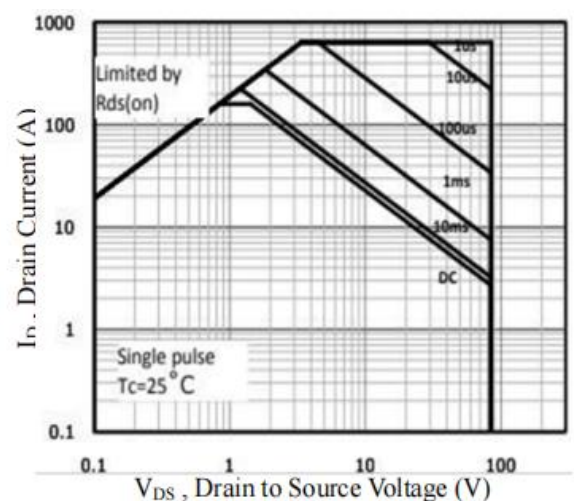




Fig.7 Switching Time Waveform

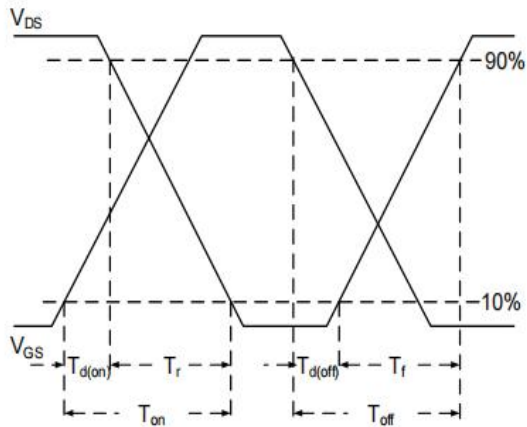
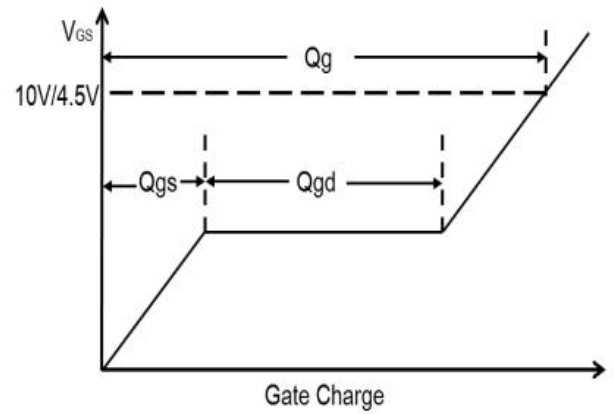


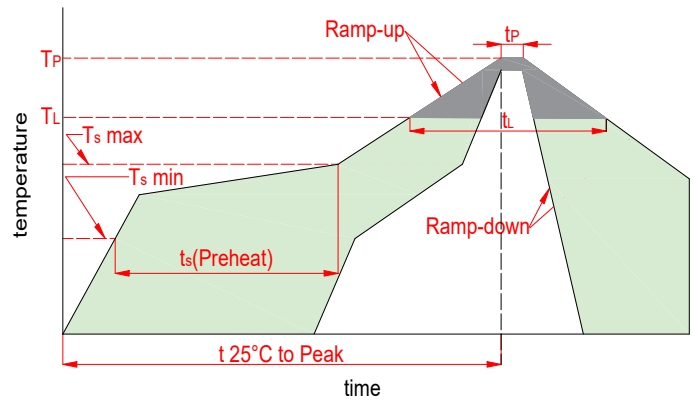
Fig.8 Gate Charge Waveform



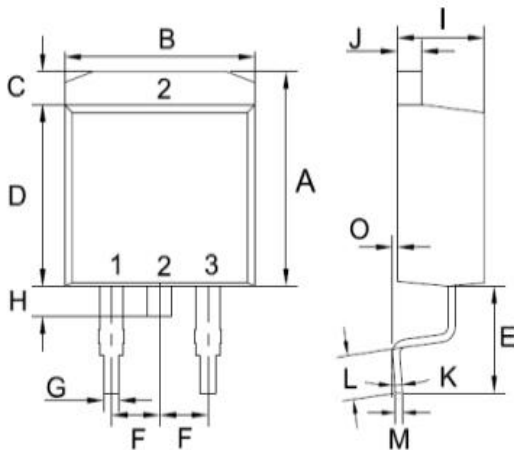


5. Rating And Characteristic Curves

Reflow Condition		Lead-free
Pre Heat	Temp. min($T_{s(min)}$)	150°C
	Temp. max($T_{s(min)}$)	200°C
	Time(min to max)(t_s)	60~180s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3°C/s max
$T_s(max)$ to T_L -Ramp-up Rate		3°C/s max
Reflow	Temp.(T_L)(Liquidus)	217°C
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		245 ^{+0/-5} °C
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6°C/s max
Time 25°C to peak Tempe.(T_p)		8 minutes max
Do not exceed		245°C

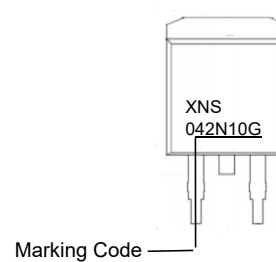
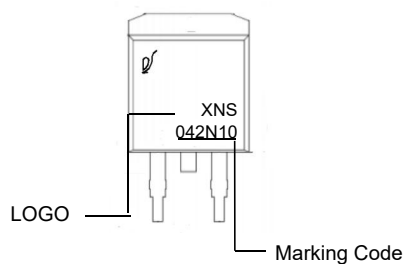


6. Dimensions



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.370	0.433	9.40	11.00
B	0.386	0.411	9.81	10.45
C	0.042	0.066	1.07	1.67
D	0.331	0.364	8.40	9.25
E	0.165	0.210	4.20	5.34
F	0.092	0.108	2.34	2.74
G	0.024	0.040	0.61	1.01
H	0.028	0.063	0.70	1.60
I	0.167	0.193	4.25	4.90
J	0.042	0.058	1.07	1.47
L	0.078	0.102	1.99	2.59
M	0.011	0.019	0.28	0.48
O	0.000	0.012	0.00	0.30

7. Part Marking System





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