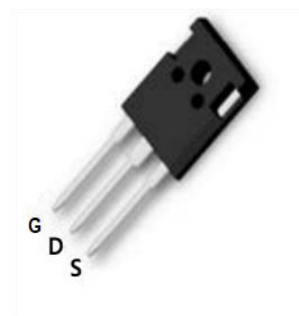




1.Features

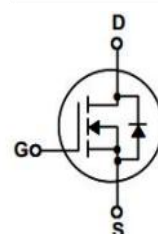
- V_{DS} 600V
- I_D 68A
- $R_{DS(ON)} \leq 50\Omega$ @ $V_{GS}=10V$

TO-247



2.Mechanical Data

- Case:Molded Plastic,TO-247;
- Epoxy:UL 94V-0 rate flame retardant
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Marking: marked on body.
- Mounting Position : Any.



- 1.Gate
2. Drain
3. Source

3.Maximum Ratings and Electrical Characteristics

Rating at 25°C Ambient temperature unless otherwise specified

Characteristics		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	600	V
Drain Current Continuous	$T_C=25^{\circ}C$	I_D	68	A
	$T_C=100^{\circ}C$		31	
Drain Current Pulsed		I_{DM}	200	A
Single Pulsed Avalanche Energy @L=0.1mH		E_{AS}	200	mJ
Gate-Source Voltage		V_{GS}	± 20	V
Maximum Junction Temperature		T_J	-55 to +150	$^{\circ}C$
Storage Temperature Range		T_{stg}	-55 to +150	$^{\circ}C$
Thermal Resistance, Junction-to-Case		$R_{\theta JA}$	62	$^{\circ}C/W$
Thermal Resistance, Junction-to-Case		$R_{\theta JC}$	0.31	$^{\circ}C/W$



Characteristics	Symbol	Test conditions	Min	TYP	Max	Unit
Off Characteristics						
Drain -Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V,I _D =1mA	650	-	-	V
Zero Gate Voltage Drain Current @T _J =25°C	I _{DSS}	V _{DS} = 10V,V _{GS} = 0V	3	4	5	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = 20V	-	-	100	nA
Gate-Source Leakage Current		V _{GS} = -20V	-	-	-100	nA
On Characteristics						
Gate Threshold Voltage	V _{GS (th)}	V _{GS} = V _{DS} , I _D =250μA	2.0	3.0	4.0	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A	-	40	50	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =50V V _{GS} =0V f = 100KHz	-	5100	-	pF
Output Capacitance	C _{oss}		-	239	-	
Reverse Transfer Capacitance	C _{rss}		-	1.7	-	
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DS} =500V, V _{GS} =18V I _D =20A ,R _G = 2Ω, L = 250μH	-	15	-	ns
Turn-on Rise Time	t _r		-	6	-	
Turn-off Delay Time	t _{d(off)}		-	62	-	
Turn-off Fall Time	t _f		-	4.2	-	
Total Gate Charge	Q _g	V _{DS} =500V, V _{GS} =18A I _D =20A, L = 250μH	-	75.6	-	nC
Gate-Source Charge	Q _{gs}		-	35.4	-	
Gate-Drain Charge	Q _{gd}		-	20.5	-	
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	I _S =20A,V _{GS} =0V	-	-	1.2	V
Reverse Recovery Time	T _{rr}	I _F =20A,V _{GS} =10V dI/dt=100A/μS Lσ = 50nH, Cσ = 10pF	-	149	-	ns
Reverse Recovery Charge	Q _{rr}		-	0.96	-	nC
Peak reverse recovery current *3	I _{rrm}		-	12.9	-	A



4. Rating And Characteristic Curves

Fig.1 Charge Characteristics

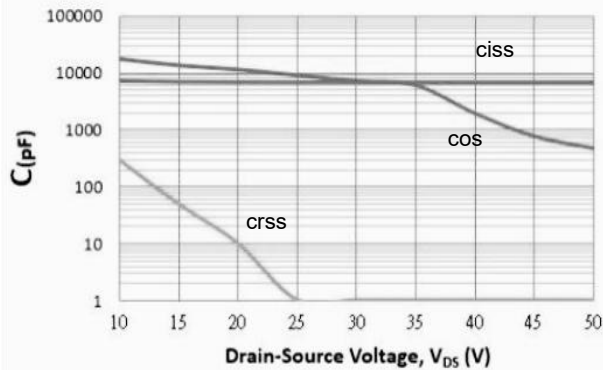


Fig.2 Gate Charge Measurement Circuit

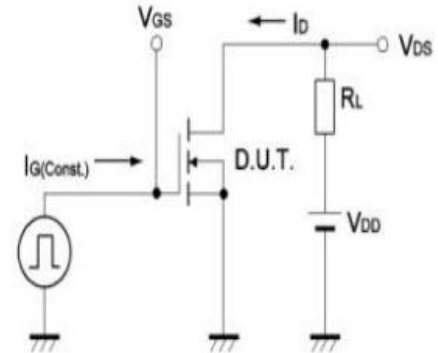


Fig.3 Gate Charge Waveform

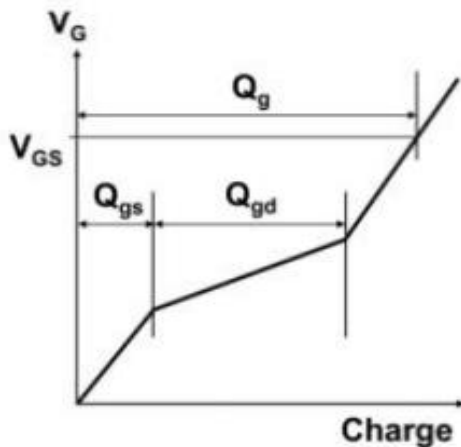


Fig.4 Switching Characteristics Measurement Circuit

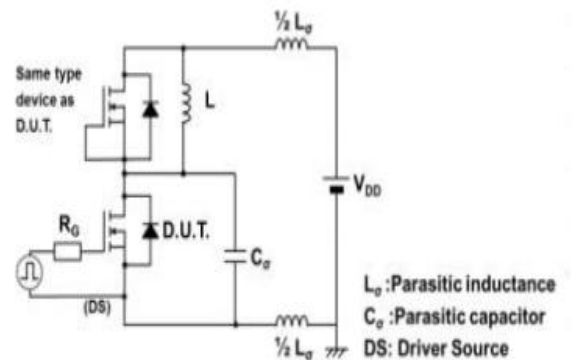


Fig.5 Waveforms for Switching Time

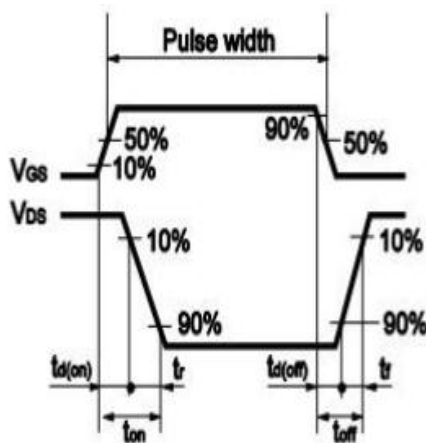


Fig.6 Waveforms for Switching Energy Loss

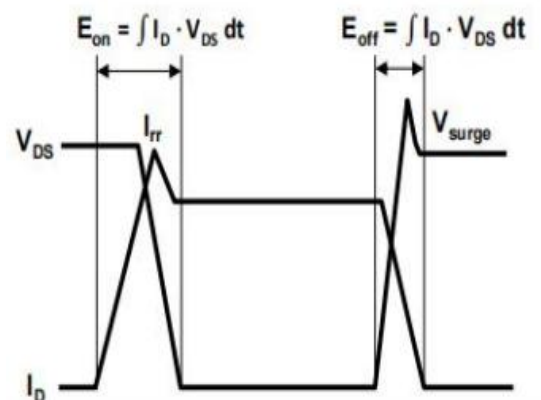




Fig.7 ReverseRecoveryTime Measurement Circuit

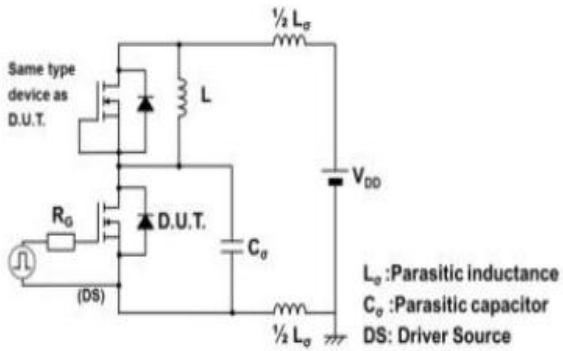
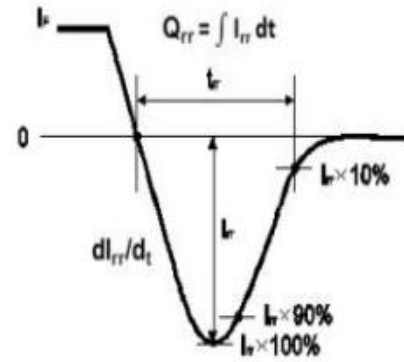
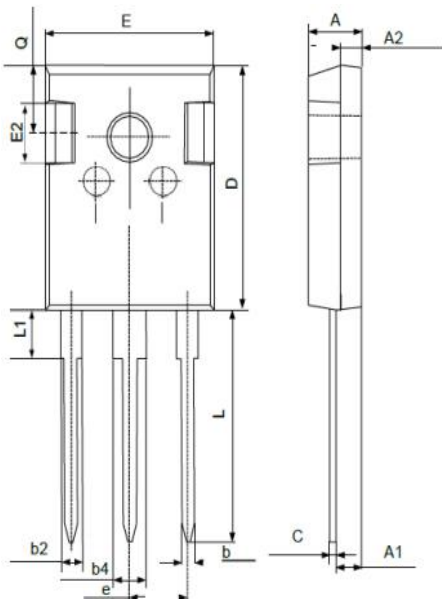


Fig.8 Reverse Recovery Waveform



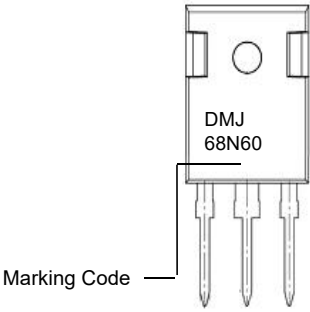
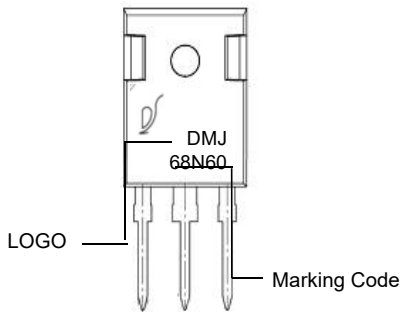


5.Dimensions



DIM	Unit(inch)		Unit(mm)	
	MIN	MAX	MIN	MAX
A	0.189	0.205	4.80	5.20
A1	0.087	0.102	2.21	2.59
A2	0.073	0.085	1.85	2.15
b	0.044	0.054	1.11	1.36
b2	0.075	0.089	1.91	2.25
b4	0.115	0.133	2.91	3.38
c	0.020	0.030	0.51	0.75
D	0.819	0.839	20.80	21.30
E	0.610	0.634	15.50	16.10
E2	0.145	0.205	3.68	5.20
e	5.44BSC			
L	0.776	0.800	19.72	20.32
L1	-	0.176	-	4.47
Q	0.216	0.236	5.49	6.00

6. Part Marking System



7. Package Information

Package	Packing Type	Quantity(pcs)
TO-247	Tube	25



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