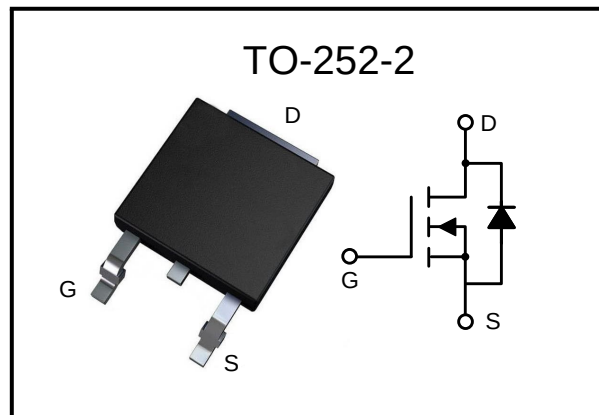


Features

- $V_{BR(DSS)}=100V$
- $I_D=15A$
- $R_{DS(ON)}@10V,TYP=88m\Omega$
- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance

Package



Application

- Power Switching Application
- SMPS 2nd Synchronous Rectifier
- MB/VGA Vcore
- Lighting

Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise specified)

Symbol	Parameter		Value	Units
V_{DS}	Drain-Source Voltage		100	V
V_{GS}	Gate - Source Voltage		± 20	
I_D	Drain Current	$T_C=25^{\circ}C$	15	A
		$T_C=100^{\circ}C$	8.5	
		$T_A=25^{\circ}C$	5	
I_{DM}	Drain Current-Pulse ⁽¹⁾		60	A
I_{AS}	Single Pulsed Avalanche Current		12.5	A
E_{AS}	Single Pulsed Avalanche Energy		16	mJ
P_D	Power Dissipation	$T_C=25^{\circ}C$	34.5	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient		50	$^{\circ}C/W$
$R_{\theta JC}$	Thermal Resistance From Junction to Case		3.6	$^{\circ}C/W$
T_J	Junction Temperature		150	$^{\circ}C$
T_{stg}	Storage Temperature Range		-55 to +150	$^{\circ}C$



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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250uA	100	–	–	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V, V _{GS} =0V	–	–	1	uA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V	–	–	±100	nA
On Characteristics						
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _D =250uA	1.0	1.5	2.5	V
Static Drain-source On Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =12A	–	88	110	mΩ
		V _{GS} =4.5V, I _D =8A	–	96	140	mΩ
Forward Transconductance	g _{fs}	V _{DS} =5V, I _D =4.5A	–	13	–	S
Dynamic Characteristics						
Input capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f = 1MHz	–	890	–	pF
Output capacitance	C _{oss}		–	60	–	
Reverse transfer capacitance	C _{rss}		–	25	–	
Static Drain-source On Resistance	R _g	V _{GS} =V _{DS} =0V, f=1MHz	–	1.5	–	Ω
Switching Characteristics						
Turn-on delay time	T _{d(on)}	V _{DD} =25V, V _{GS} =10V, R _G =1Ω, R _L =5Ω	–	14.2	–	nS
Turn-on Rise time	T _r		–	33.7	–	
Turn -Off Delay Time	T _{d(off)}		–	40.2	–	
Turn -Off Fall time	T _f		–	6	–	
Gate to Drain Charge	Q _g	V _{DS} =80V, V _{GS} =10V, I _D =10A	–	24	–	nC
Gate to Source Charge	Q _{gs}		–	5	–	
Gate to Drain Charge	Q _{gd}		–	8	–	
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V,I _S =1A	–	–	1.2	V
Continuous Source Current	I _S	–	–	12	–	A
Pulsed Source Current	I _{SM}		–	24	–	
Reverse Recovery Time	T _{rr}	I _F =4.5A, d _I F/d _t =500A/μs	–	21	–	ns
Reverse Recovery Charge	Q _{rr}		–	27.3	–	nC

Notes:

(1) Pulse Test: Pulse Width ≤300μs, duty cycle ≤1.5%, Starting T_J= 25°C.



Typical Characteristics

Figure 1 : Typical Output Characteristics

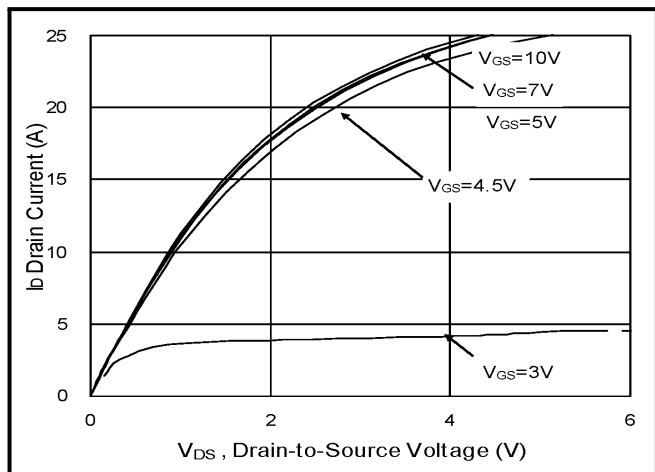


Figure 2 : On-Resistance vs. Gate-Source

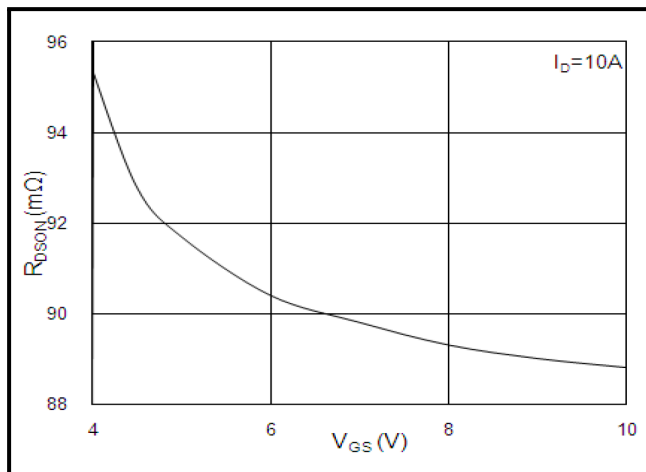


Figure 3 : Forward Characteristics Of Reverse

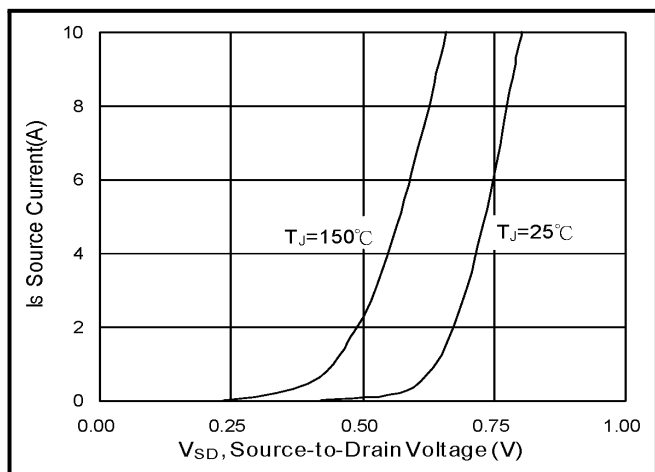


Figure 4 : Gate-Charge Characteristics

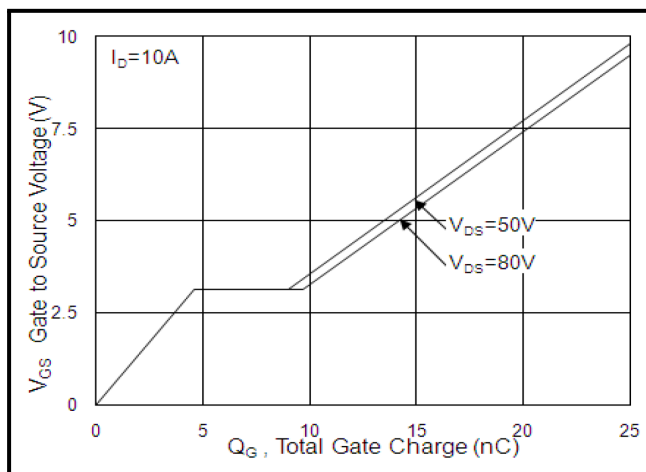


Figure 5 : Normalized VGS(th) vs. TJ

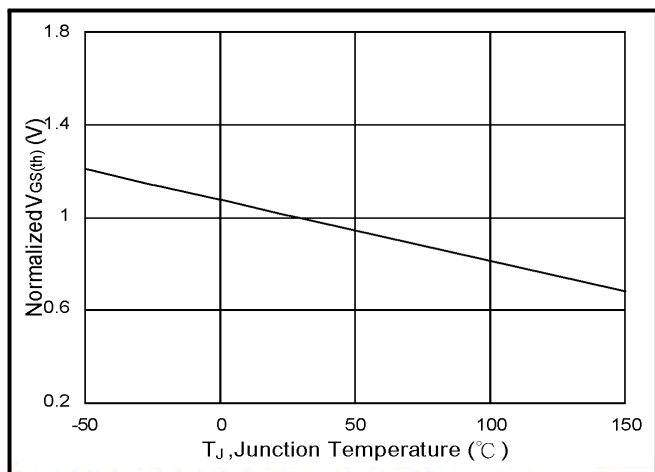
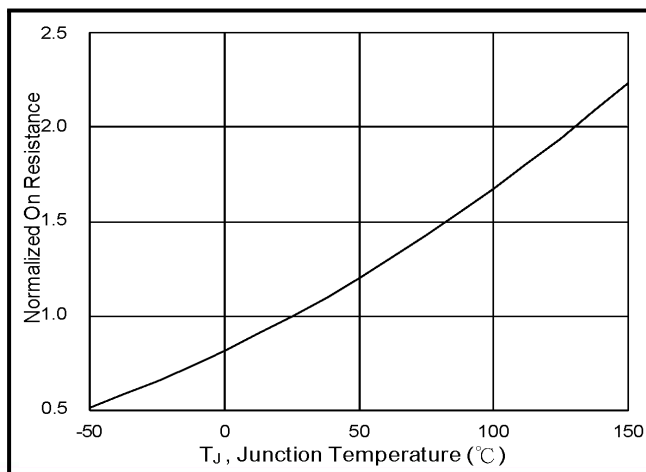


Figure 6 : Normalized RDSON vs. TJ



Typical Characteristics

Figure 7 : Capacitance

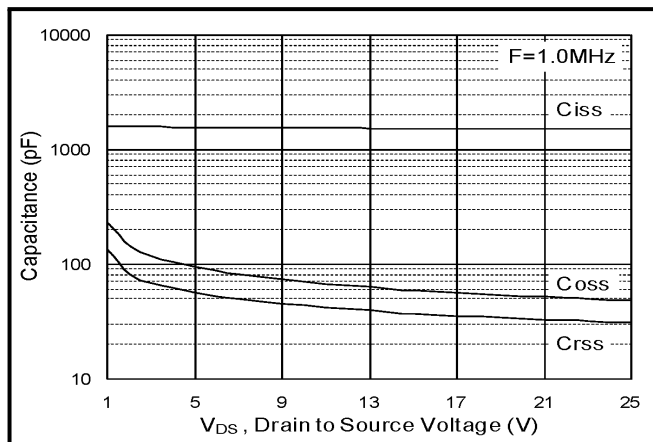


Figure 8 : Safe Operating Area

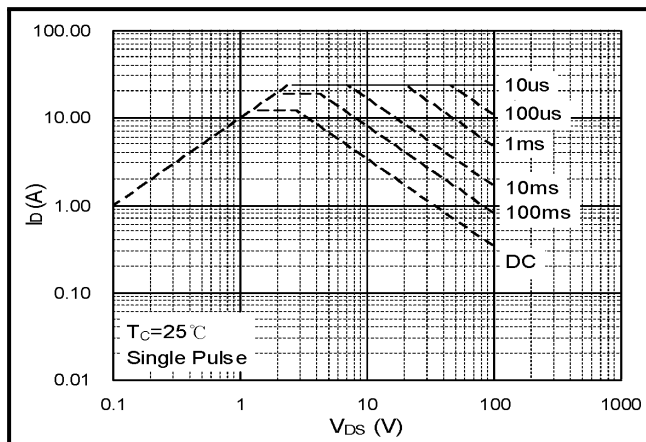
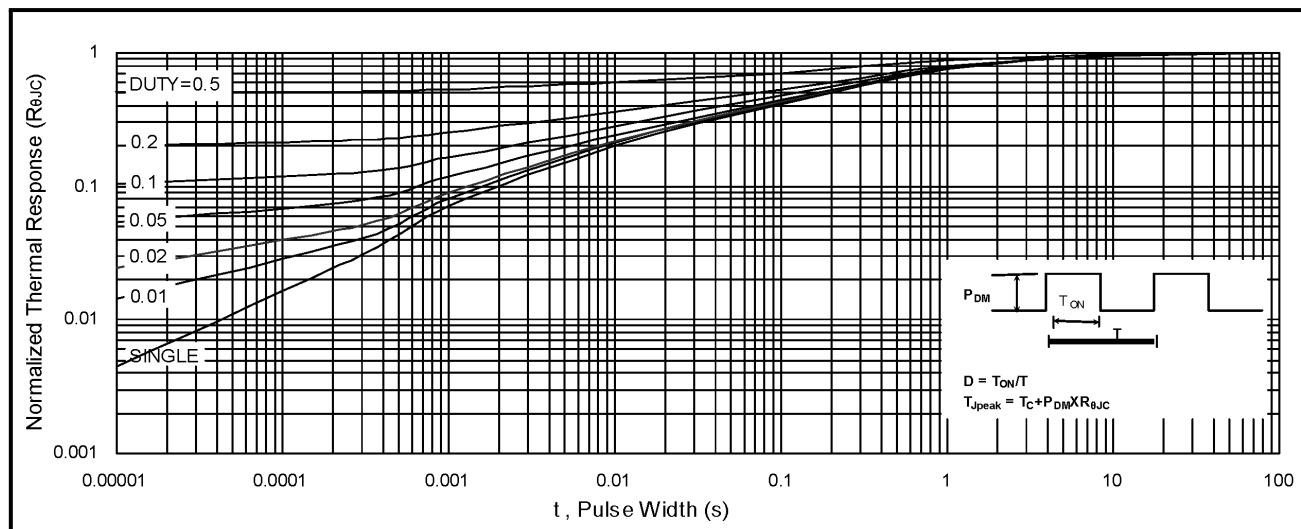


Figure 9 : Normalized Maximum Transient Thermal Impedance



Test Circuit

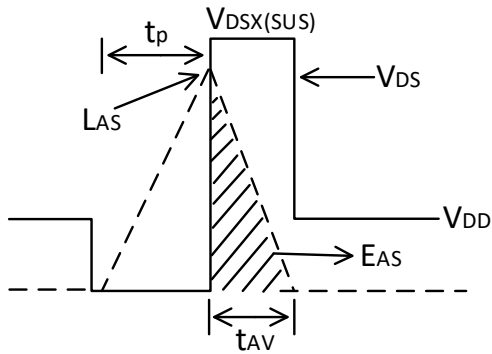


Fig 1.EAS Test Circuit

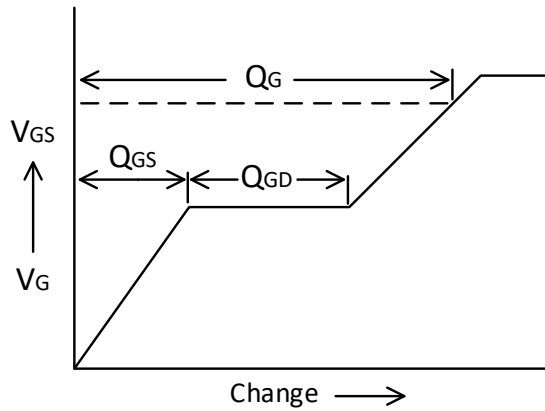
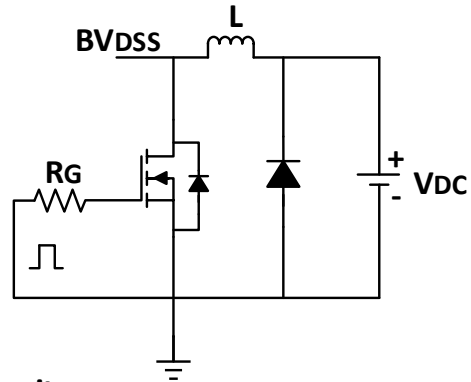


Fig 2.Gate Charge Test Circuit

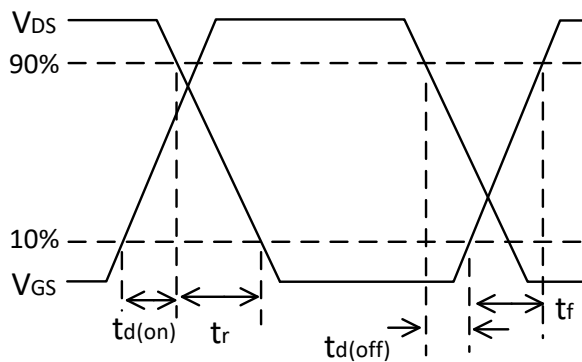
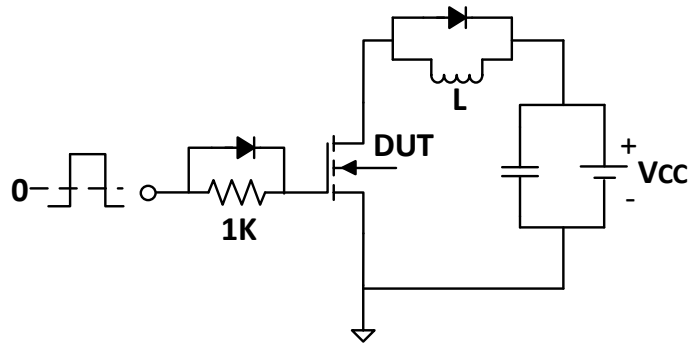
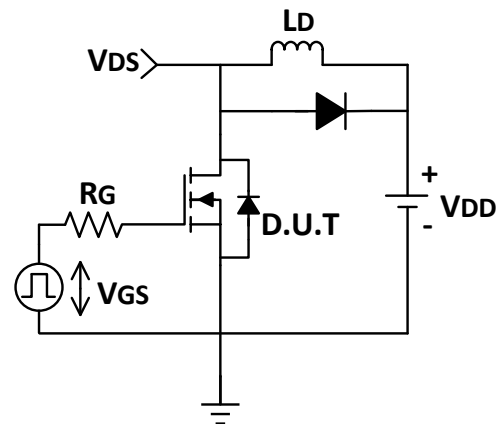
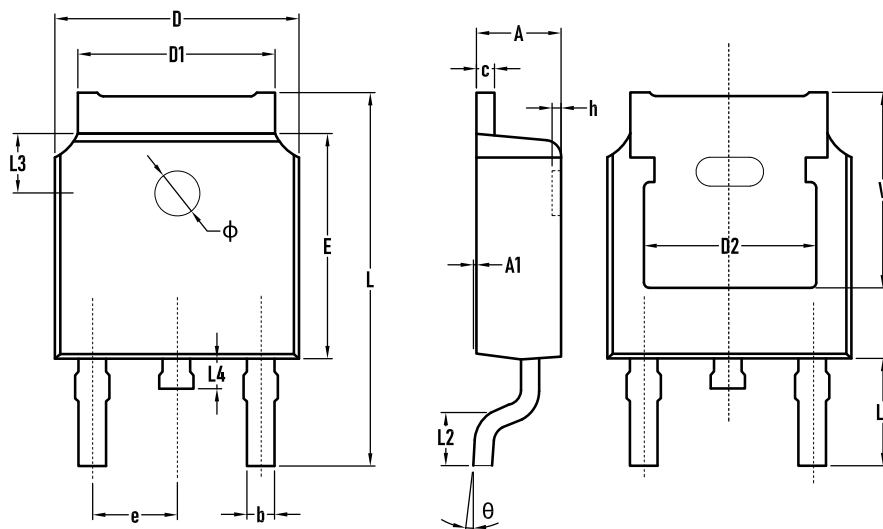


Fig 3 . Switch Time Test Circuit



Packaging Tape - TO-252-2



SYMBOL	Millimeters		Inches	
	MIN.	MAX.	MIN.	MAX.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	

