24V，4mΩ，85A，Single N-Channel

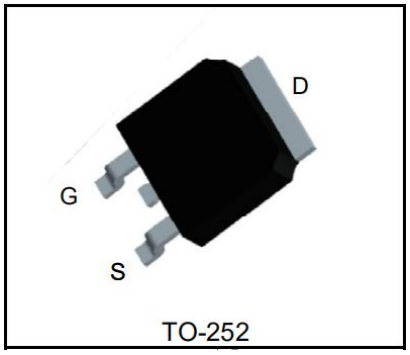
1. Features

- 24V MOSFET technology
- Low on-state resistance
- Fast switching
- Vgs±12V

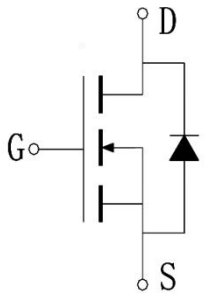
V_{DS}	$R_{DS(on)}$ Typ	I_D Max
24V	4 mΩ @ 4.5 V	85A
	5 mΩ @ 2.5 V	

2. Applications

- Power Switching Appliaction
- Load Switching



Pin Description



Schematic diagram

3. Absolute max Ratings at Ta=25℃（Note1）

Parameter	Symbol	Maximum	Units
Drain to Source Voltage	V_{DSS}	24	V
Gate to Source Voltage	V_{GSS}	12	V
Drain Current (DC)	I_D	85	A
Drain Current (Pulse) PW≤300μs	I_{DP}	297.5	A
Total Dissipation	P_D	42	W
Avalanche Energy, Single Pulsed	E_{AS}	57	mJ
Junction Temperature	T_j	150	C
Storage Temperature	Tstg	-55 to +150	C

Note 1 : Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

4. Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Junction to Ambient (Note 2)	$R_{\theta JA}$	100	℃/W
Junction to case	$R_{\theta JC}$	3.5	℃/W

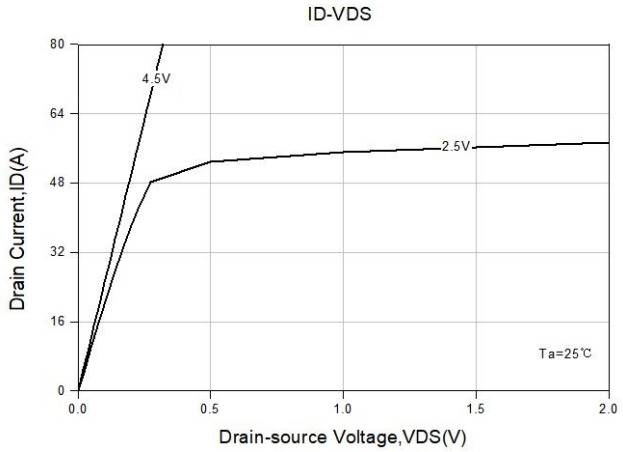
Note 2 :When mounted on 1 inch square copper board t ≤ 10sec The value in any given application depends on the user's specific board design.

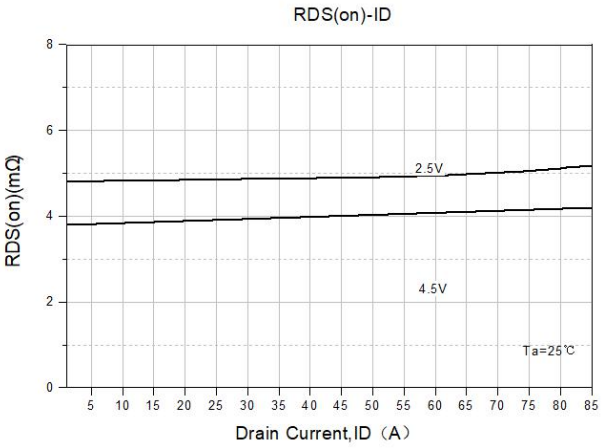
5. Electrical characteristics at Ta=25℃（Note3）

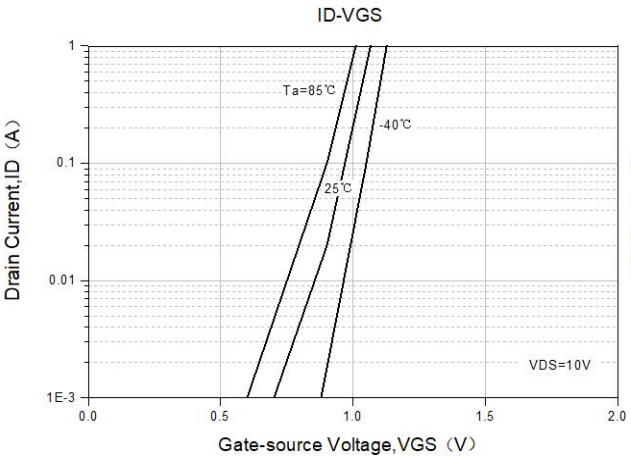
Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Drain to Source Breakdown Voltage	$V_{(BR)SSS}$	IS = 250uA, VGS = 0 V	24			V
Zero-Gate Voltage Drain Current	I_{DSS}	VDS = 24 V, VGS = 0 V			100	nA
Gate to Source Leakage Current	I_{GSS1}	VGS = ±12V, VSS = 0 V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	VDS=VGS, IDS = 250uA	0.5	0.7	0.9	V
Static Drain to Source On-State Resistance	$R_{DS(on)}$	ID = 20 A, VGS = 4.5 V	-	4	5.5	mΩ
		ID = 15 A, VGS = 2.5 V	-	5	8	mΩ
Input Capacitance	C_{iss}	VGS=0V, VDS=10V, Frequency=1.0MHz		1300		pF
Output Capacitance	C_{oss}			190		pF
Reverse Transfer Capacitance	C_{rss}			175		pF
Turn-ON Delay Time	$t_{d(on)}$	VDD=10V, IDS=10A, VGEN=4.5V,RG=3Ω		3.2		ns
Rise Time	tr			4.2		ns
Turn-OFF Delay Time	$t_{d(off)}$			9		ns
Fall Time	tf			9.5		ns
Total Gate Charge	Qg	VDS=10V ,VGS=4.5V, IDS=10A		18		nC
Diode Forward Voltage	VFSD	IS=10A, VGS=0	0.4	0.8	1.2	V

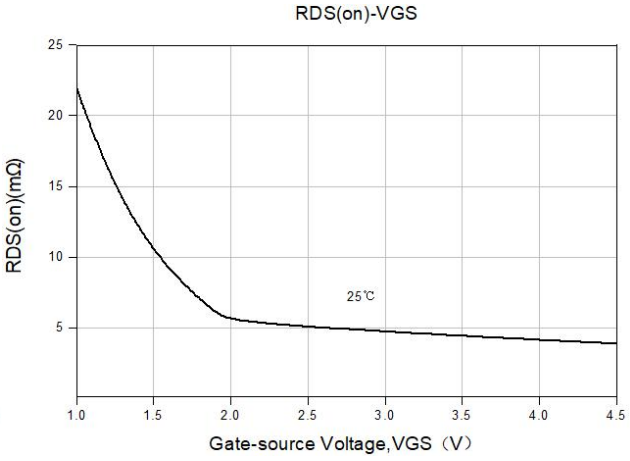
Note 3 : Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

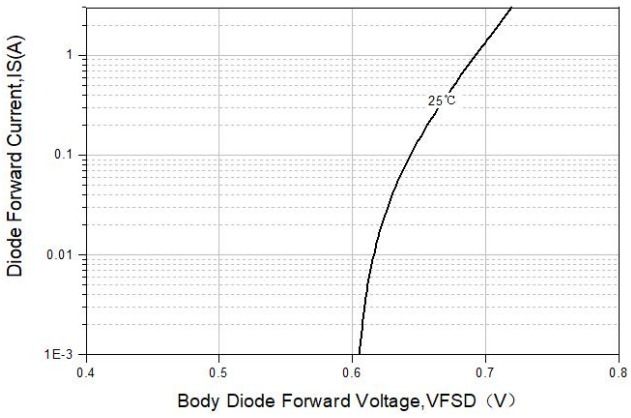




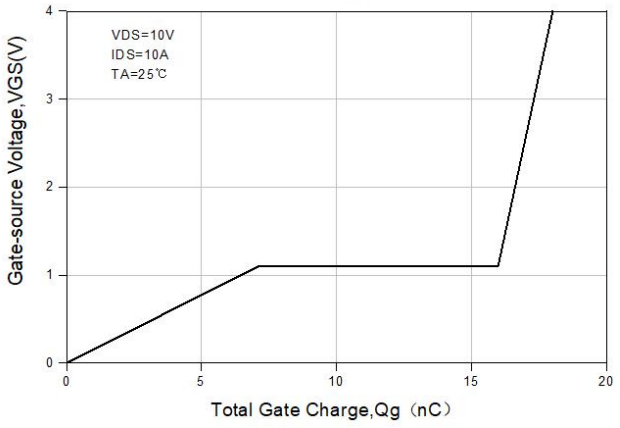




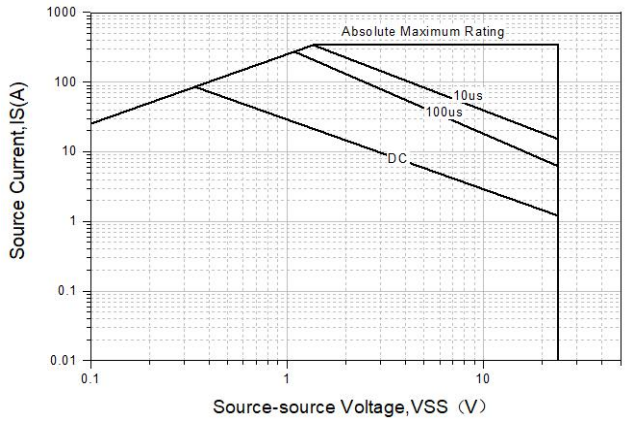
IS-VFSD



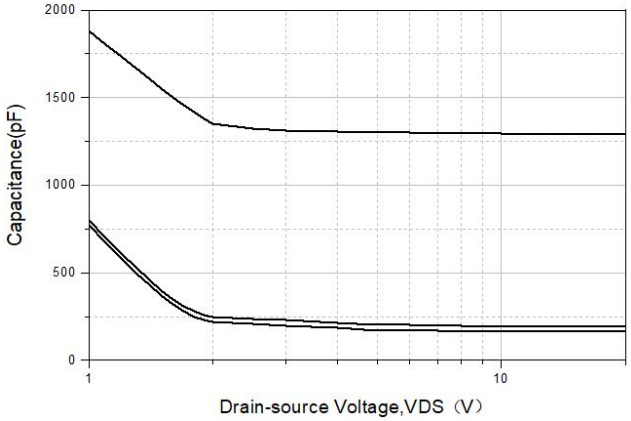
VGS-Qg



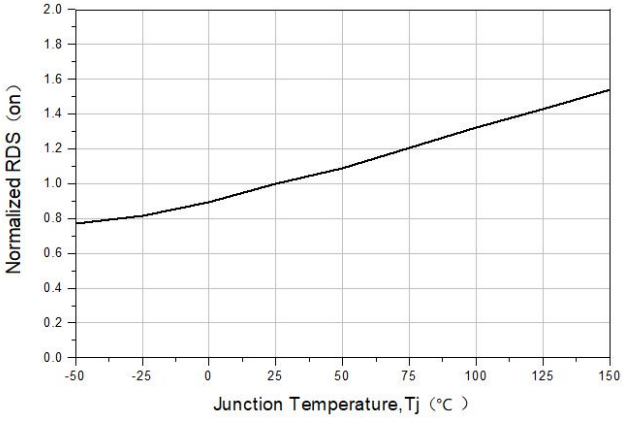
Safe Operating Area



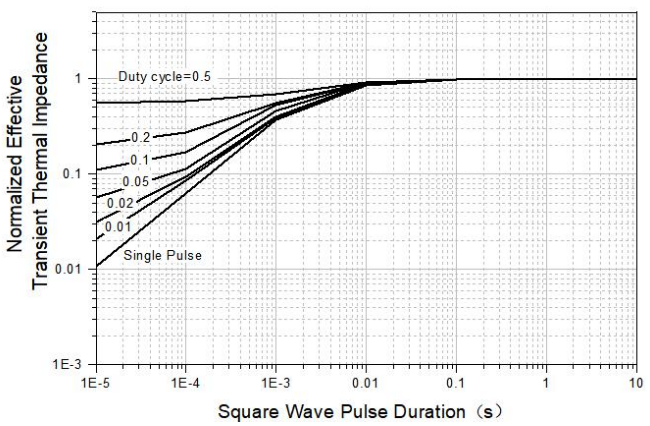
Capacitance



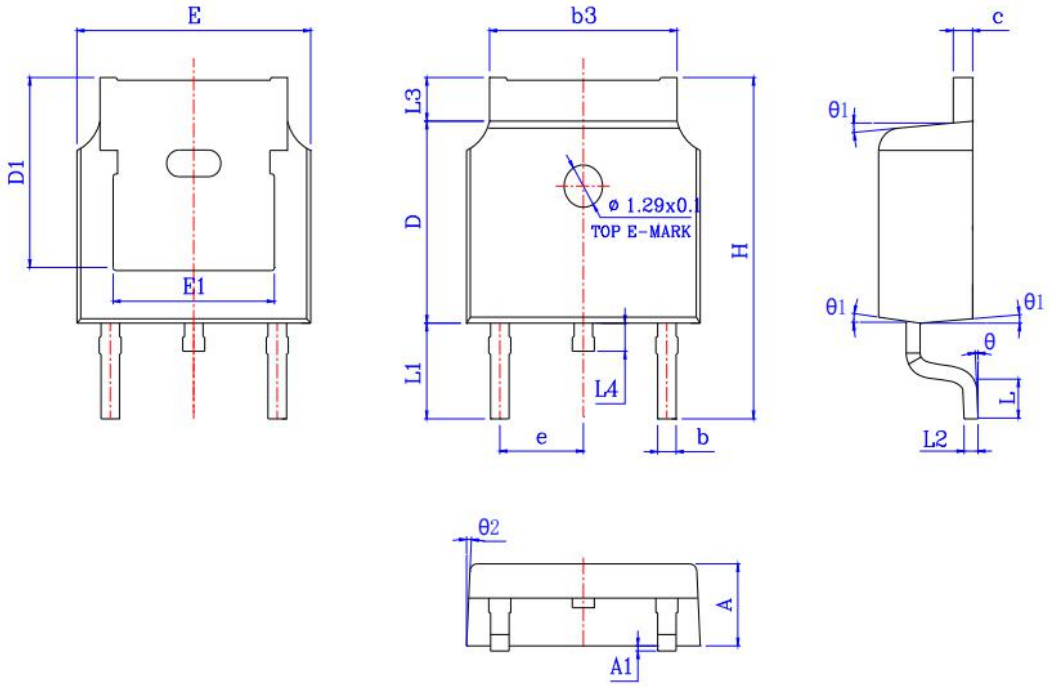
RDS(on)-Tj



Thermal Response



7.Package Dimensions



SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	2.200	2.300	2.400	0.087	0.091	0.094
A1	*	*	0.100	*	*	0.004
b	0.660	0.760	0.860	0.026	0.030	0.034
b3	5.130	5.295	5.460	0.202	0.208	0.215
c	0.470	0.535	0.600	0.019	0.021	0.024
D	6.000	6.100	6.200	0.236	0.240	0.244
D1	5.30 REF			0.20 REF		
E	6.500	6.600	6.700	0.256	0.260	0.264
E1	4.700	4.810	4.920	0.185	0.189	0.194
e	2.28 REF			0.09 REF		
H	9.800	10.100	10.400	0.386	0.398	0.409
L	1.400	1.550	1.700	0.055	0.061	0.067
L1	2.743 REF			0.108 REF		
L2	0.510 BSC			0.020 BSC		
L3	0.900	1.075	1.250	0.035	0.042	0.049
L4	0.600	0.800	1.000	0.024	0.031	0.039
θ	0°	*	8°	0°	*	8°
θ1	5°	7°	9°	5°	7°	9°
θ2	5°	7°	9°	5°	7°	9°

8.Publisher

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9.Attention

The information herein is given to describe certain components and shall not be considered as warranted characteristics.

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