



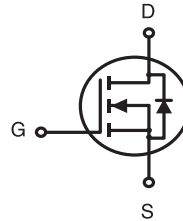
N-Channel Logic Level Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY

V _{DSS}	I _D	R _{DS(ON)} (mΩ) Max
150V	32A	46 @ V _{GS} =10V
		50 @ V _{GS} =4.5V

FEATURES

- Super high dense cell design for low R_{DS(ON)}.
- Rugged and reliable.
- TO-263 package.



ABSOLUTE MAXIMUM RATINGS (T_C=25°C unless otherwise noted)

Symbol	Parameter		Limit	Units
V _{DS}	Drain-Source Voltage		150	V
V _{GS}	Gate-Source Voltage		±20	V
I _D	Drain Current-Continuous ^c	T _C =25°C	32	A
		T _C =100°C	22.6	A
I _{DM}	-Pulsed ^{a c}		94	A
E _{AS}	Single Pulse Avalanche Energy ^d		216	mJ
P _D	Maximum Power Dissipation	T _C =25°C	136	W
T _J , T _{STG}	Operating Junction and Storage Temperature Range		-55 to 175	°C

THERMAL CHARACTERISTICS

R _{θJC}	Thermal Resistance, Junction-to-Case	1.1	°C/W
R _{θJA}	Thermal Resistance, Junction-to-Ambient	55	°C/W

STB28N15

Ver 1.0

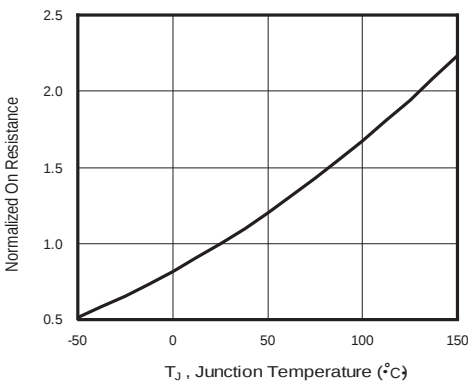
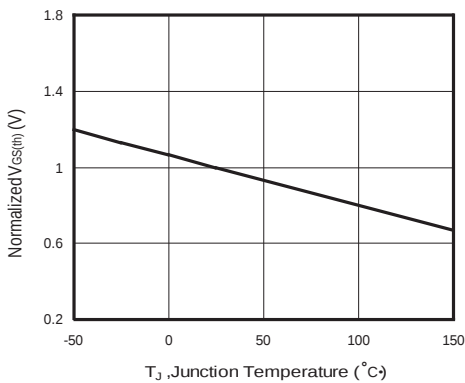
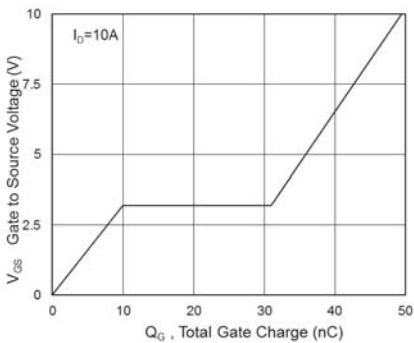
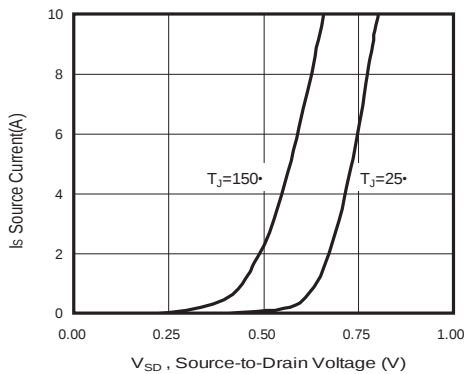
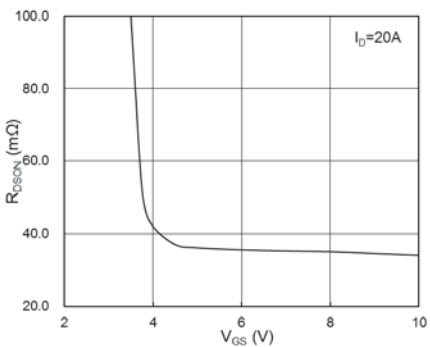
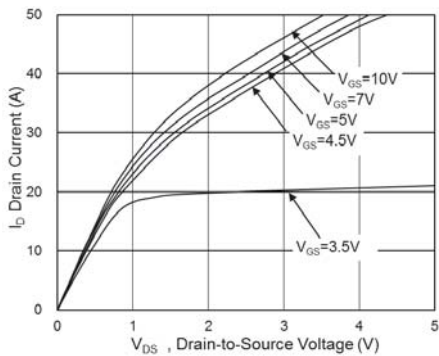
ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250uA	150			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =120V , V _{GS} =0V			1	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V , V _{DS} =0V			±100	nA
ON CHARACTERISTICS						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1.2		2.5	V
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =10V , I _D =20A		35	46	m ohm
		V _{GS} =4.5V , I _D =20A		37	50	m ohm
g _{FS}	Forward Transconductance	V _{DS} =5V , I _D =20A		55		S
DYNAMIC CHARACTERISTICS ^b						
C _{iss}	Input Capacitance	V _{DS} =25V,V _{GS} =0V f=1.0MHz		3760		pF
C _{oss}	Output Capacitance			210		pF
C _{RSS}	Reverse Transfer Capacitance			163		pF
SWITCHING CHARACTERISTICS ^b						
t _{D(ON)}	Turn-On Delay Time	V _{DD} =50V I _D =10A V _{GS} =4.5V R _{GEN} = 3.3 ohm		20		ns
t _r	Rise Time			22		ns
t _{D(OFF)}	Turn-Off Delay Time			68		ns
t _f	Fall Time			16		ns
Q _g	Total Gate Charge	V _{DS} =75V,I _D =10A,V _{GS} =4.5V		41		nC
Q _{gs}	Gate-Source Charge	V _{DS} =75V,I _D =10A, V _{GS} =4.5V		11		nC
Q _{gd}	Gate-Drain Charge			22		nC
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
V _{SD}	Diode Forward Voltage	V _{GS} =0V,I _S =1A			1.2	V

Notes

- Pulse Test: Pulse Width ≤ 10us, Duty Cycle ≤ 1%.
- Guaranteed by design, not subject to production testing.
- Drain current limited by maximum junction temperature.
- Starting T_J=25°C, L=0.3mH, V_{DD}= 25V.
- Mounted on FR4 Board of 1 inch², 2oz.

Apr,08,2016



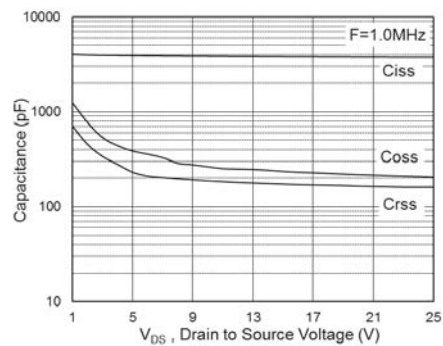


Fig.7 Capacitance

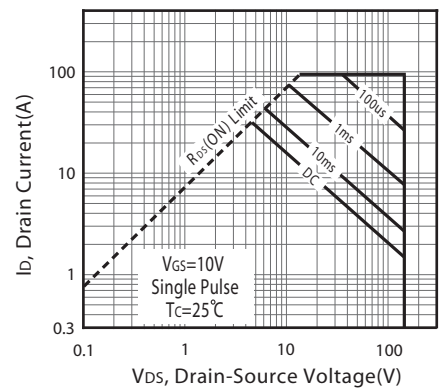


Fig.8 Safe Operating Area

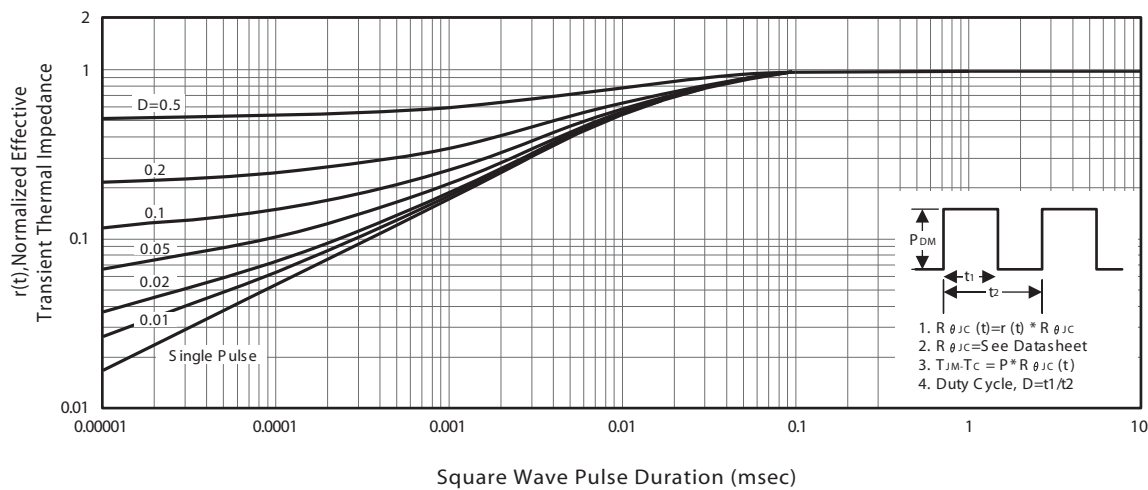
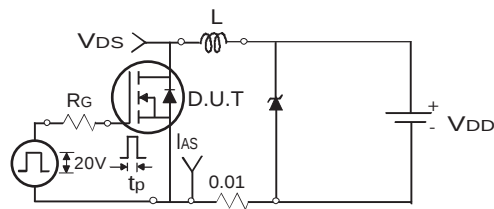
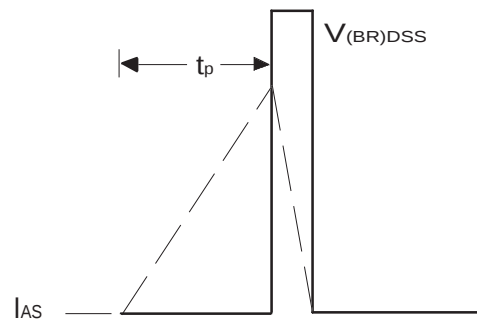


Figure 9. Normalized Thermal Transient Impedance Curve



Uncamped Inductive Test Circuit

Fig.10a

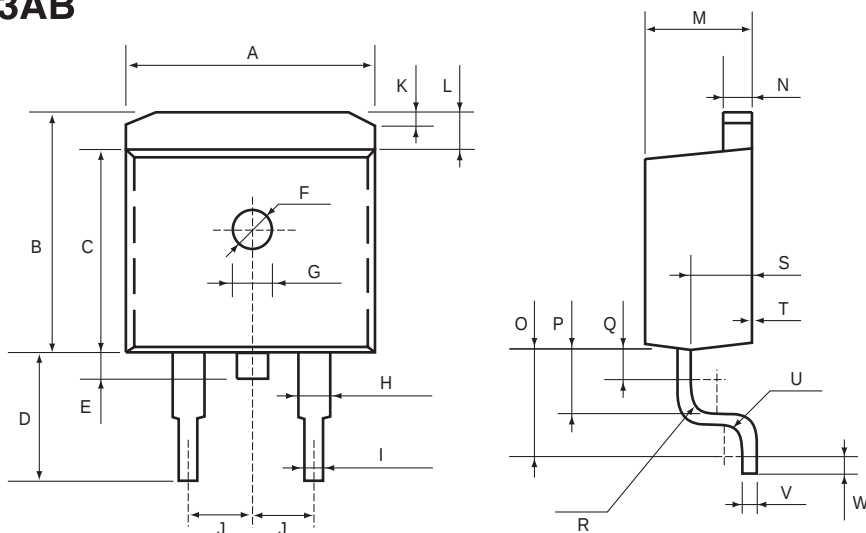


Unclamped Inductive Waveforms

Fig.10b

PACKAGE OUTLINE DIMENSIONS

TO-263AB

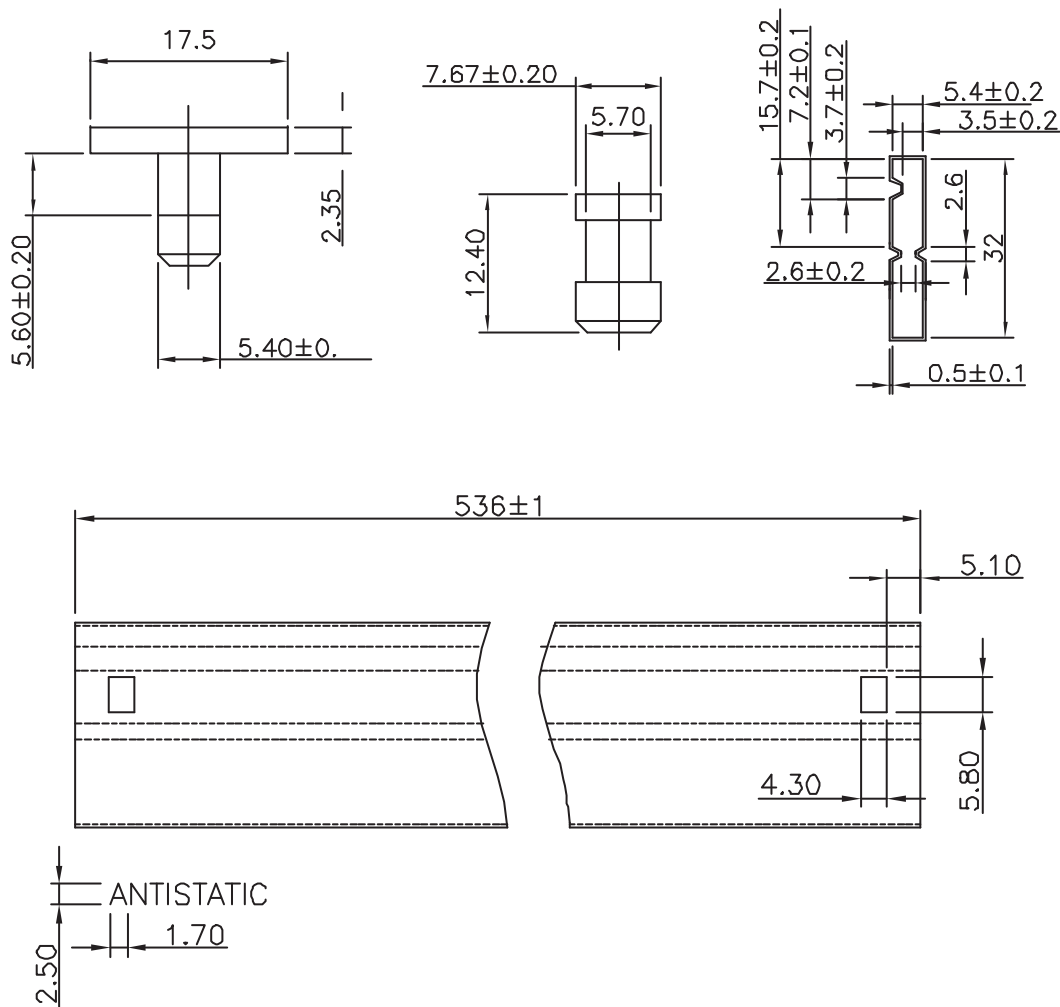


SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.9	10.5	0.390	0.413
B	9.5	10.3	0.374	0.406
C	8.3	8.9	0.327	0.350
D	4.7	5.5	0.185	0.217
E	1.5		0.059	
F	ϕ 1.6		ϕ 0.063	
G	1.0	1.4	0.039	0.055
H	1.07	1.47	0.042	0.058
I	0.76	1.06	0.030	0.042
J	2.04	3.04	0.080	0.120
K	0.2	0.6	0.0079	0.024
L	1.4		0.055	
M	4.24	4.64	0.167	0.183
N	1.15	1.45	0.045	0.057
O	3.25	3.75	0.128	0.148
P	2.3		0.091	
Q	1.6		0.063	
R	R0.4	R1.0	R0.0158	R0.0394
S	2.7 MAX		0.106 MAX	
T	0.0	0.3	0.0000	0.0118
U	R0.4	R1.0	R0.0158	R0.0394
V	0.3	0.5	0.0118	0.0197
W	1.2 min		0.047 min	

STB28N15

Ver 1.0

TO263AB Tube



Apr,08,2016

TOP MARKING DEFINITION

TO-263

