Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	10.5mΩ@4.5V	27A
	14.5mΩ@2.5V	

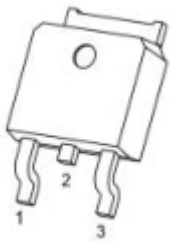
Feature

- High density cell design for ultra low Rdson
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation
- Special process technology for high ESD capability

Applications

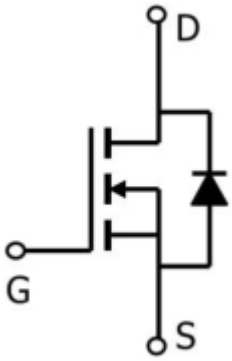
- Power switching application
- Load switching
- Uninterruptible power supply

Package

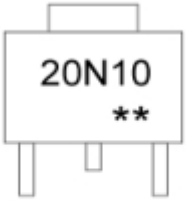


TO-252(G:1 D:2 S:3)

Circuit diagram



Marking



20N10 : Product code
** : Week code.

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±10	V
Drain Current-Continuous	I_D	27	A
Pulsed Drain Current	I_{DM}	108	A
Maximum Power Dissipation	P_D	40	W
Thermal Resistance,Junction-to-Case (1)	$R_{\theta JC}$	3.8	℃/W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

Electrical characteristics

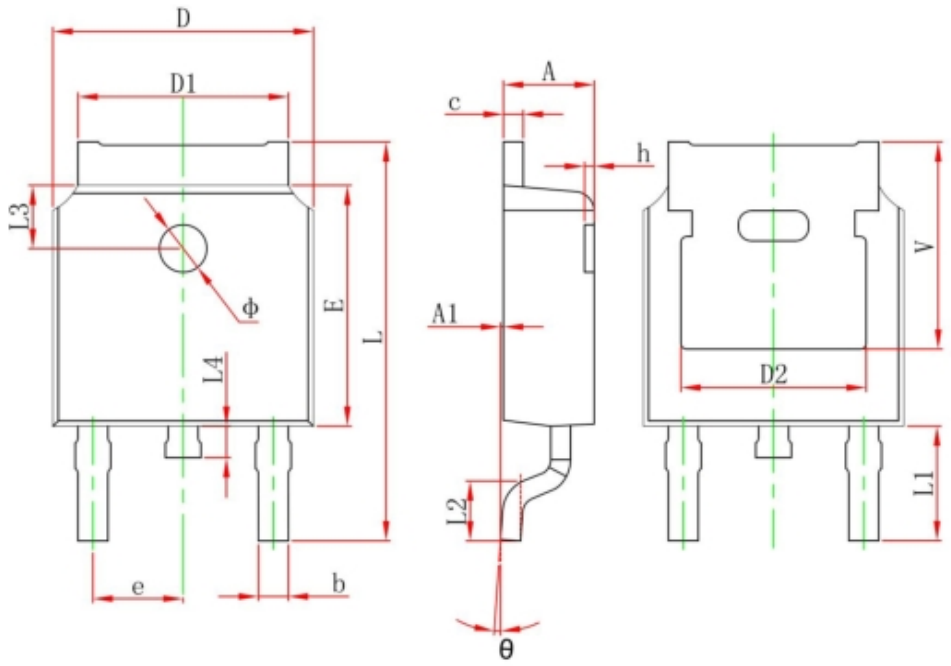
(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =20V,V_{GS} = 0V			1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V , V_{DS}=0V			±100	uA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	0.7	1.2	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} =4.5V, I_D =8A		10.5	14	mΩ
		V_{GS} =2.5V, I_D =6A		14.5	20	
Dynamic characteristics (2)						
Input Capacitance	C_{iss}	V_{DS}=10V, V_{GS}=0V, f=1MHz		865		pF
Output Capacitance	C_{oss}			105		
Reverse Transfer Capacitance	C_{rss}			55		
Switching Characteristics (2)						
Turn-On Delay Time	$T_{d(on)}$	V_{DS}=4V, I_D=4A, R_{GEN}=5V, R_{GEN}=1Ω			10	nS
Rise Time	T_r				20	
Turn-Off Delay Time	$T_{d(off)}$				32	
Fall Time	T_f				12	
Drain-Source Diode Characteristics						
Diode Forward Voltage (2)	V_{SD}	I_S=1A, V_{GS} = 0V			1.2	V

Notes:

1. Surface Mounted on FR4 Board, t ≤ 10 sec.
2. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
3. Guaranteed by design, not subject to production

TO-252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In 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 REF.		0.190 REF.	
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 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
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 REF.		0.211 REF.	