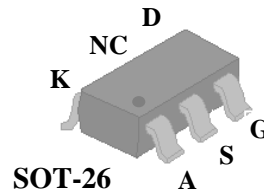




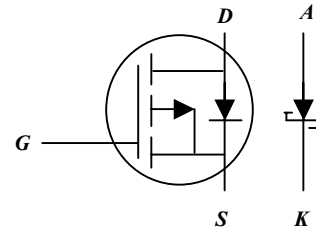
- ▼ Low Gate Charge
- ▼ Surface Mount Package
- ▼ RoHS Compliant



BV_{DSS}	-16V
$R_{DS(ON)}$	150m Ω
I_D	-1.6A

Description

Advanced Power MOSFETs from APEC provide the designer with the best combination of fast switching, ruggedized device design, ultra lower on-resistance and cost-effectiveness.



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-16	V
V_{KA}	Reverse Voltage (Schottky)	20	V
V_{GS}	Gate-Source Voltage	± 8	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current ³	-1.6	A
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current ³	-1.2	A
I_{DM}	Pulsed Drain Current ¹	-6	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation	0.55	W
	Linear Derating Factor	0.005	W/ $^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 125	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 125	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Value	Unit
R_{thj-a}	Maximum Thermal Resistance, Junction-ambient ³	180	$^\circ\text{C}/\text{W}$
	Maximum Thermal Resistance, Junction-ambient ³ (Schottky)	180	$^\circ\text{C}/\text{W}$



Electrical Characteristics @ $T_j=25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-16	-	-	V
$\Delta BV_{DSS}/\Delta T_j$	Breakdown Voltage Temperature Coefficient	Reference to 25°C , $I_D=-1\text{mA}$	-	-0.03	-	$V/^\circ\text{C}$
$R_{DS(ON)}$	Static Drain-Source On-Resistance ²	$V_{GS}=-4.5V, I_D=-1.6A$	-	-	150	m Ω
		$V_{GS}=-2.5V, I_D=-1.2A$	-	-	200	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.3	-	-1	V
g_{fs}	Forward Transconductance	$V_{DS}=-5V, I_D=-1.6A$	-	1.6	-	S
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-16V, V_{GS}=0V$	-	-	-1	μA
	Drain-Source Leakage Current ($T_j=70^\circ\text{C}$)	$V_{DS}=-12V, V_{GS}=0V$	-	-	-25	μA
I_{GSS}	Gate-Source Leakage	$V_{GS}=\pm 8V$	-	-	± 100	nA
Q_g	Total Gate Charge ²	$I_D=-1.6A$	-	6	10	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=-12V$	-	1	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	$V_{GS}=-4.5V$	-	2	-	nC
$t_{d(on)}$	Turn-on Delay Time ²	$V_{DS}=-10V$	-	7	-	ns
t_r	Rise Time	$I_D=-1A$	-	18	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=3.3\Omega, V_{GS}=-5V$	-	19	-	ns
t_f	Fall Time	$R_D=10\Omega$	-	6	-	ns
C_{iss}	Input Capacitance	$V_{GS}=0V$	-	700	1120	pF
C_{oss}	Output Capacitance	$V_{DS}=-10V$	-	85	-	pF
C_{rss}	Reverse Transfer Capacitance	$f=1.0\text{MHz}$	-	65	-	pF
R_g	Gate Resistance	$f=1.0\text{MHz}$	-	9.5	15	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage ²	$I_S=-1.6A, V_{GS}=0V$	-	-	-1.2	V

Schottky Characteristics @ $T_j=25^\circ\text{C}$

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_F	Forward Voltage Drop	$I_F=500\text{mA}$	-	-	0.45	V
		$I_F=1A$	-	-	0.5	V
I_r	Reverse Leakage Current	$V_r=16V$	-	-	400	μA

Notes:

1. Pulse width limited by Max. junction temperature.
2. Pulse test
3. Surface mounted on 1 in² copper pad of FR4 board, $t_{\leq} 10\text{sec}$; 240°C/W when mounted on min. copper pad.

THIS PRODUCT IS SENSITIVE TO ELECTROSTATIC DISCHARGE, PLEASE HANDLE WITH CAUTION.

USE OF THIS PRODUCT AS A CRITICAL COMPONENT IN LIFE SUPPORT OR OTHER SIMILAR SYSTEMS IS NOT AUTHORIZED.

APEC DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

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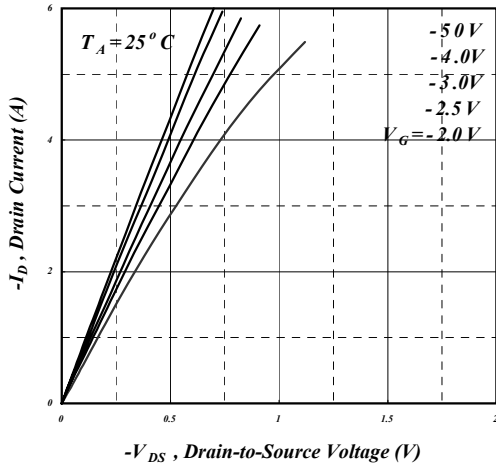


Fig 1. Typical Output Characteristics

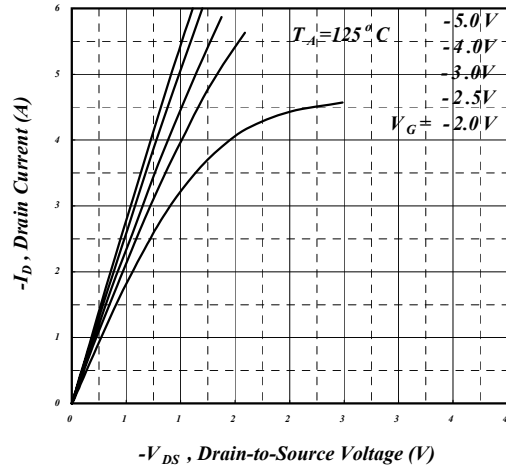


Fig 2. Typical Output Characteristics

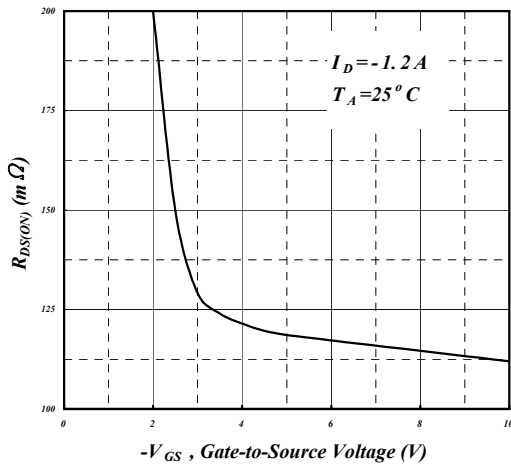


Fig 3. On-Resistance v.s. Gate Voltage

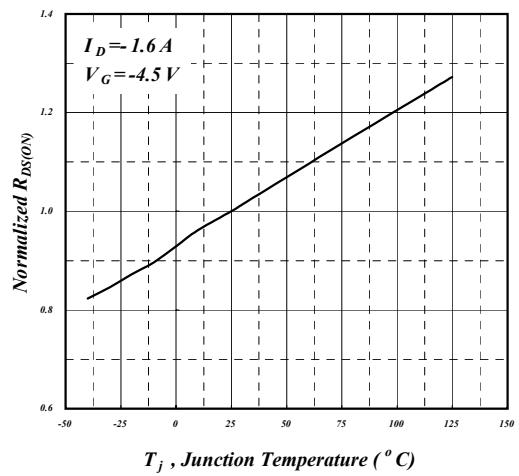


Fig 4. Normalized On-Resistance v.s. Junction Temperature

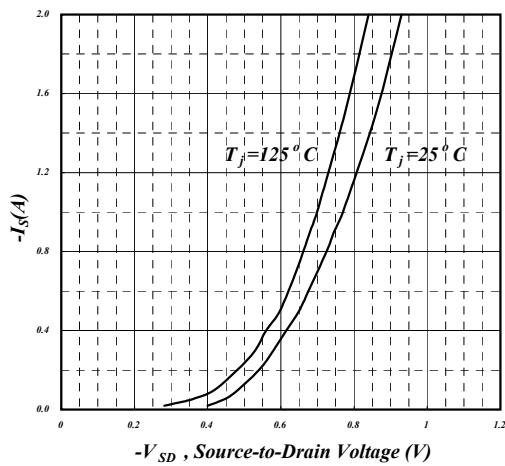


Fig 5. Forward Characteristic of Reverse Diode

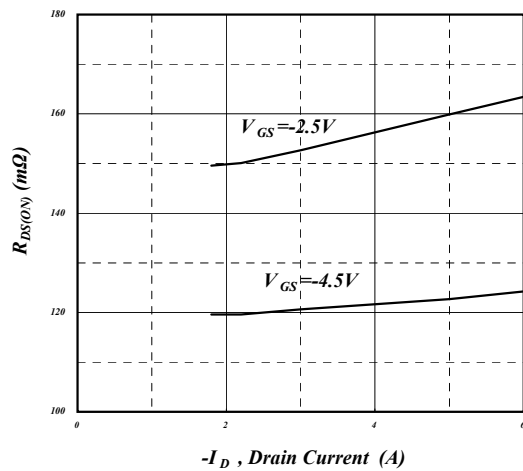


Fig 6. On-Resistance vs. Drain Current

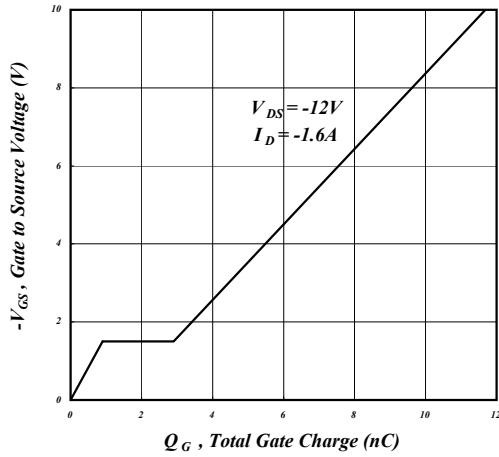


Fig 7. Gate Charge Characteristics

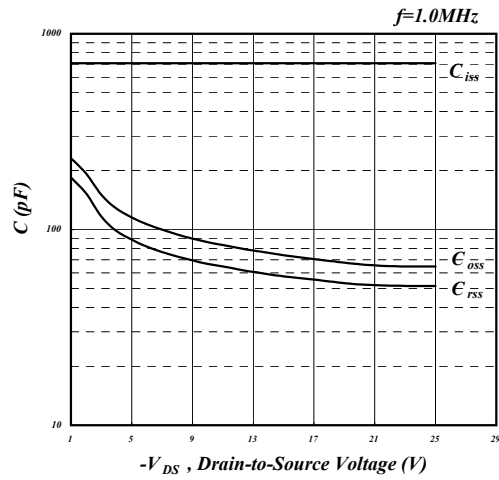


Fig 8. Typical Capacitance Characteristics

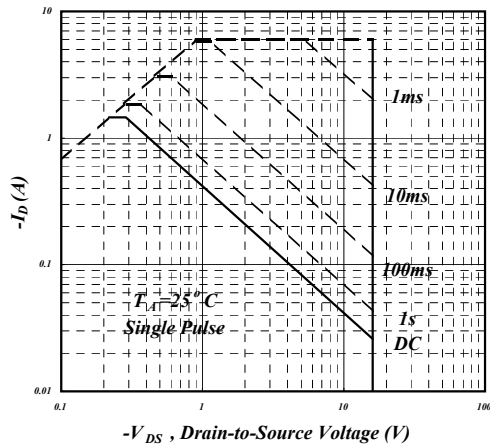


Fig 9. Maximum Safe Operating Area

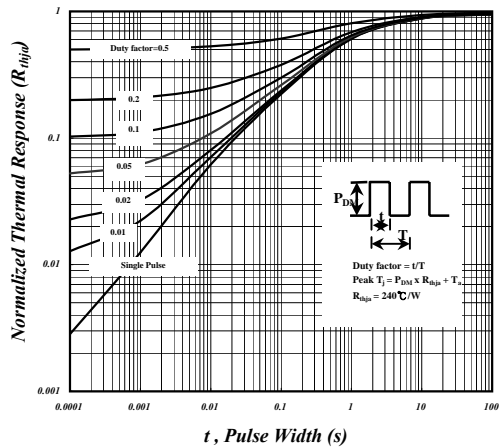


Fig 10. Effective Transient Thermal Impedance

SCHOTTKY DIODE

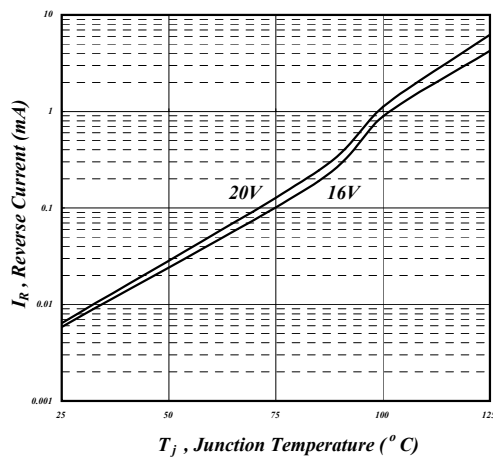


Fig 1. Reverse Leakage Current v.s. Junction Temperature

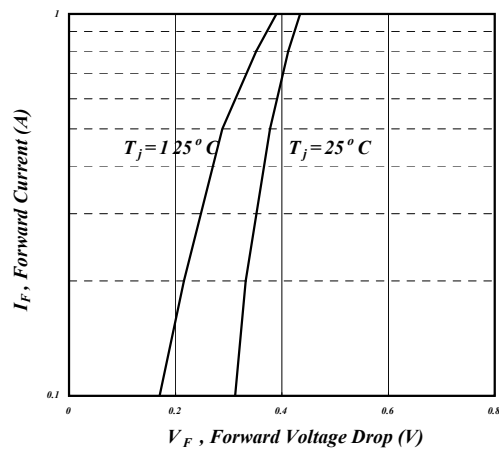
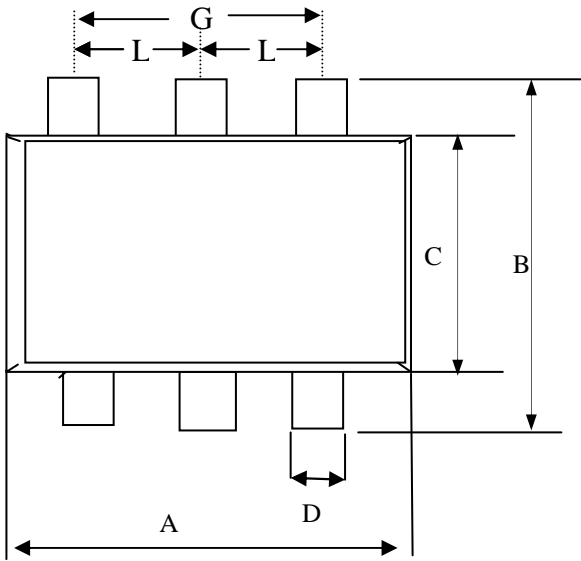


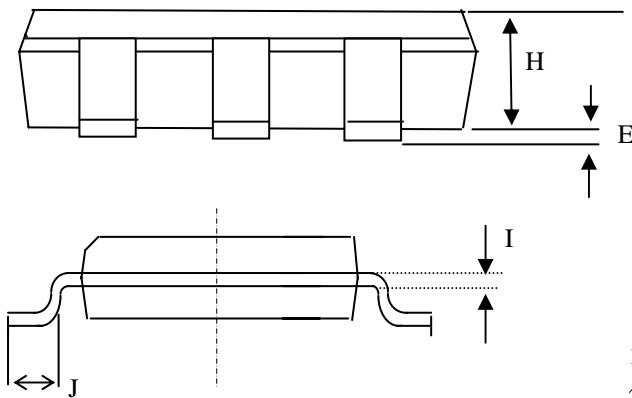
Fig 2. Forward Voltage Drop



Package Outline : SOT-26

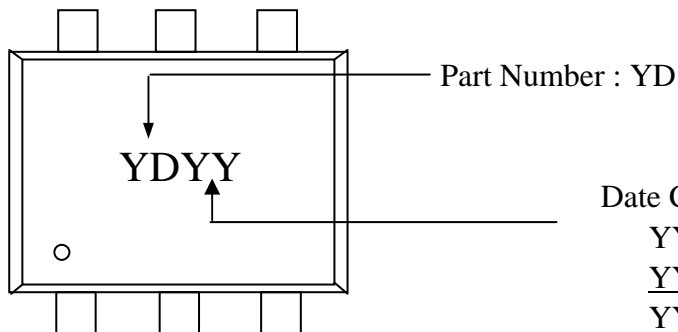


SYMBOLS	Millimeters		
	MIN	NOM	MAX
A	2.70	2.90	3.10
B	2.60	2.80	3.00
C	1.40	1.60	1.80
D	0.30	0.43	0.55
E	0.00	0.05	0.10
H	1.20REF		
G	1.90REF		
I	0.12REF		
J	0.37REF		
L	0.95REF		



- 1.All Dimension Are In Millimeters.
- 2.Dimension Does Not Include Mold Protrusions.

Part Marking Information & Packing : SOT-26



Date Code

- YY:2004,2008,2012...
- YY:2003,2007,2011...
- YY:2002,2006,2010...
- YY:2001,2005,2009...